

# Manufacturers Record

Reg. U. S. Pat. Office



NOVEMBER 1932

25 CENTS A COPY

## CONTINUED IMPROVEMENT

A definite and sustained advance has been made in nearly every major industry since midsummer. The gains from the low point have been more than seasonal in many lines, indicating a fundamental rather than a temporary change for the better.

The improvement in textiles has been outstanding. Production has increased during the past three months at a more rapid rate than for any period of similar length since monthly records were first kept in 1912.

Steel production has shown a gratifying and steady rise. Although the increase in tonnage has been small compared to a normal output, the actual gain from the low point amounted to more than 60 per cent. Unfilled orders at the end of each month have been consecutively larger since August, the first month to show an increase for nearly a year and a half. Since buying has so far been confined to small purchases and has not, as yet, included to any extent, orders from the carriers, automobile manufacturers, and structural fabricators, the upturn is still more significant and encouraging.

The lumber industry, oil trade, shoe manufacturing, coal output, air passenger traffic, cement production, and the copper, brass and lead markets have all shown marked improvement.

Car loadings and electrical power production have increased consistently and at an encouraging rate.

Business failures have registered a marked decline and employment over the entire country is up by about 4 per cent.

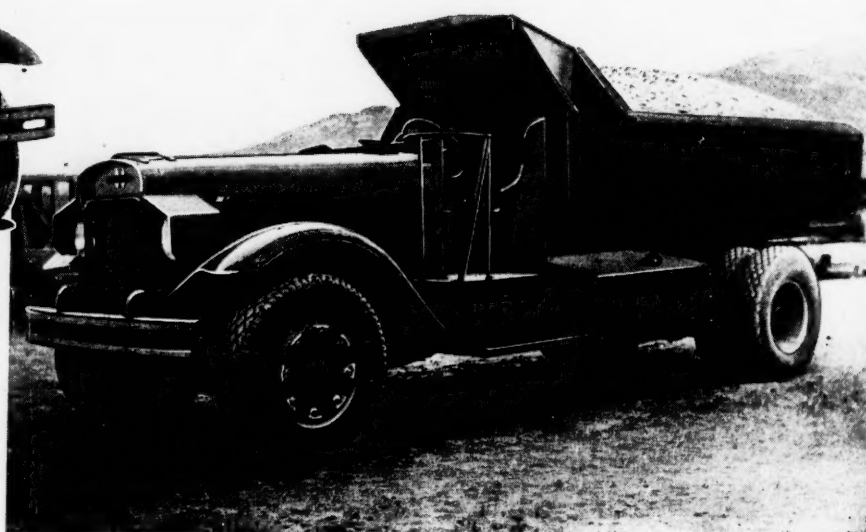
Business is unquestionably improving although it has suffered from uncertainty about the results of the coming election and the policies of government to be pursued thereafter. This uncertainty will soon be over. With this passed the improvement already experienced in spite of pre-election doubts, should continue at a more rapid rate. Business recovery that now seems under way, in all probability, will not be seriously affected by the outcome of the presidential campaign. American prosperity has always been based upon the development of this country's vast resources and the undaunted spirit of the American people.

# 30 *More Heavy-Duty Internationals Go to Work at Hoover Dam!*



Above: The new heavy-duty International A-7 as sold for average hauling service. International sizes range from ¾-ton up.

Right: A new armored International Model A-7. This capacity load of wet gravel has come eight miles to Boulder City, the full distance in third gear, with atmospheric temperature 112°, engine heat indicator never over 190°.



**O**RIGINALLY purchased for the dry tunnel excavating at Hoover Dam, International Trucks performed with such outstanding success that when it came time for the dam proper, with its heavier mud and silt, 30 new Model A-7's were added for this heavier work.

When the work was first started, Six Companies Inc. chose International Trucks against the field. More and more units were put in service until the number of Internationals *more than doubled all other makes combined—outnumbering any other single make by more than four to one.*

The International fleet is supplying the

most spectacular action in the blistering canyon and on the steep grades. The armored trucks have earned not only the admiration of every observer from driver to news cameraman but also the full confidence of the close-figuring contractors behind the scenes. *From the outset right down to date, International Trucks have handled the major part of this stupendous hauling contract.*

★ ★ ★

See the nearest of 188 Company-owned branches in the United States and Canada, or an International Truck dealer, for a demonstration of the trucks which are performing so brilliantly in this great engineering undertaking.

**INTERNATIONAL HARVESTER COMPANY**

606 So. Michigan Ave. **OF AMERICA**  
(Incorporated)

Chicago, Illinois

# INTERNATIONAL TRUCKS



# ON THE LEVEE



SINCE "Caterpillar" Tractors first went on the Mississippi Levee in 1921, each year has seen a steady increase in the number of them engaged on this stupendous task. Today, as "Caterpillar" Tractors are constantly added to levee fleets, their arrival excites no comment—it's accepted as the natural thing. Experiments with other equipment—tests of price versus quality—arouse curiosity, comment, passing interest. "Caterpillar" continues as the accepted standard.\*

## CATERPILLAR

REG. U. S. PAT. OFF.

## TRACTOR

NOVEMBER NINETEEN THIRTY-TWO

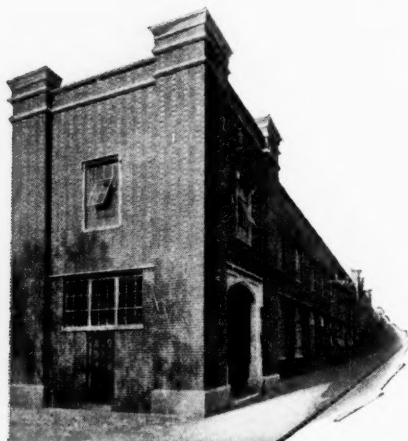
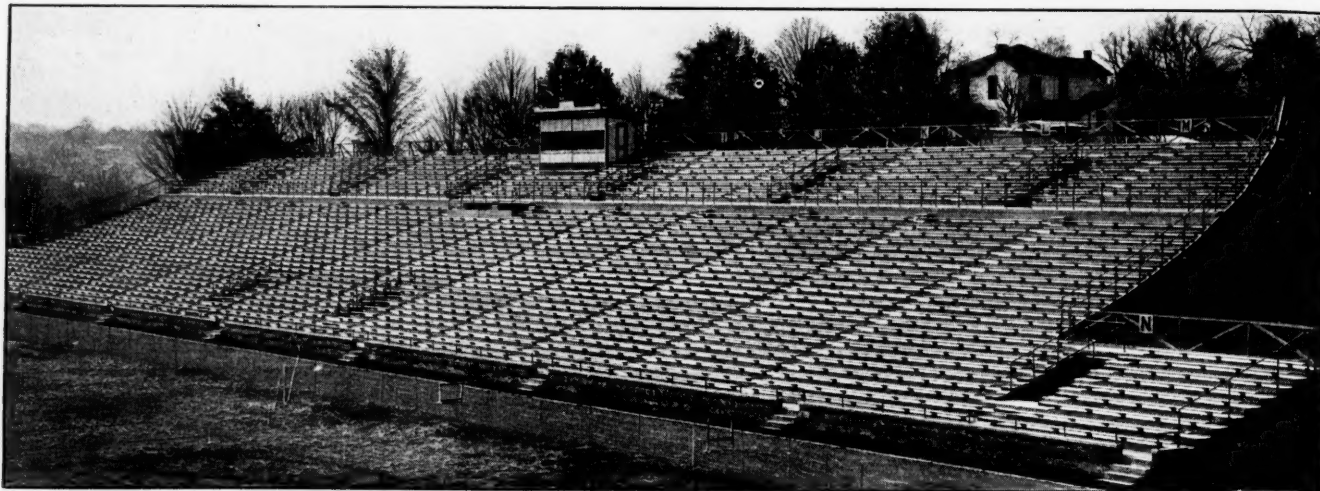
\* September deliveries on the Mississippi Levee put the total number of "Caterpillar" Tractors engaged on that job well over the 500 mark—a complete survey showed a total at that time of less than one-fourth that many tractors of all other makes combined.

Caterpillar Tractor Co., Peoria, Ill., U.S.A.  
Track-type Tractors Road Machinery  
Combines

(There's a "Caterpillar" Dealer Near You)

Prices — f. o. b. Peoria, Illinois

FIFTEEN . . . . .	\$1100	THIRTY-FIVE . . . . .	\$2400
TWENTY . . . . .	\$1450	FIFTY . . . . .	\$3675
TWENTY-FIVE . . . . .	\$1900	SIXTY-FIVE . . . . .	\$3850
DIESEL . . . . .	\$6500		



Here is a steel stadium, its deck and seating arrangement almost identical to the W & L Stadium above. But in this case the back and underpart has been utilized for 8 regular-size classrooms, an auditorium, armories, dressing rooms, showers, etc., at a considerable saving for combined facilities. We built this stadium for the Woodlawn High School, Birmingham, Ala.

## Seats, and More Seats

A few years ago we built a steel stadium for Washington and Lee University at Lexington, Virginia. Recently they had us enlarge this stadium to provide more seats for their football games. They have been highly pleased with what we have given them both as to design and cost.

Our steel stadium is a steel supporting frame with a steel deck, and then with raised wooden seats on steel brackets. It is a precise, economical and altogether durable design. Incidentally the seat and foot arrangement is the most comfortable that has ever been devised for outdoor stands.

We have built a number of steel stadia of different size and arrangement, some with more architectural treatment than others; some with a watertight deck and the space under it finished up for use as class rooms, dressing rooms, etc. Steel is always the most adaptable construction material, and its use in a stadium enables economies and facilities that cannot be had otherwise and withal a low first cost and low upkeep.

We shall be glad to furnish designs and estimates, or just talk it over, with no obligation whatever assumed or implied.

**VIRGINIA BRIDGE & IRON CO.**

Roanoke, Birmingham, Memphis, Atlanta, New Orleans  
New York, Los Angeles, Charlotte, Dallas, El Paso

Plants at Roanoke—Birmingham—Memphis

# VIRGINIA BRIDGE

## Steel Structures

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NOVEMBER NINETEEN THIRTY-TWO



One of Missouri's Modern Office Buildings

## MANUFACTURERS RECORD

Devoted to the Upbuilding of the  
Nation Through the Development  
of the South and Southwest as the  
Nation's Greatest Material Asset

*Published Monthly*

by the

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Frank Gould, President

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Branch Offices:

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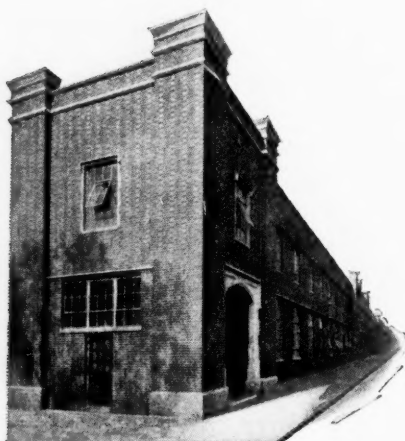
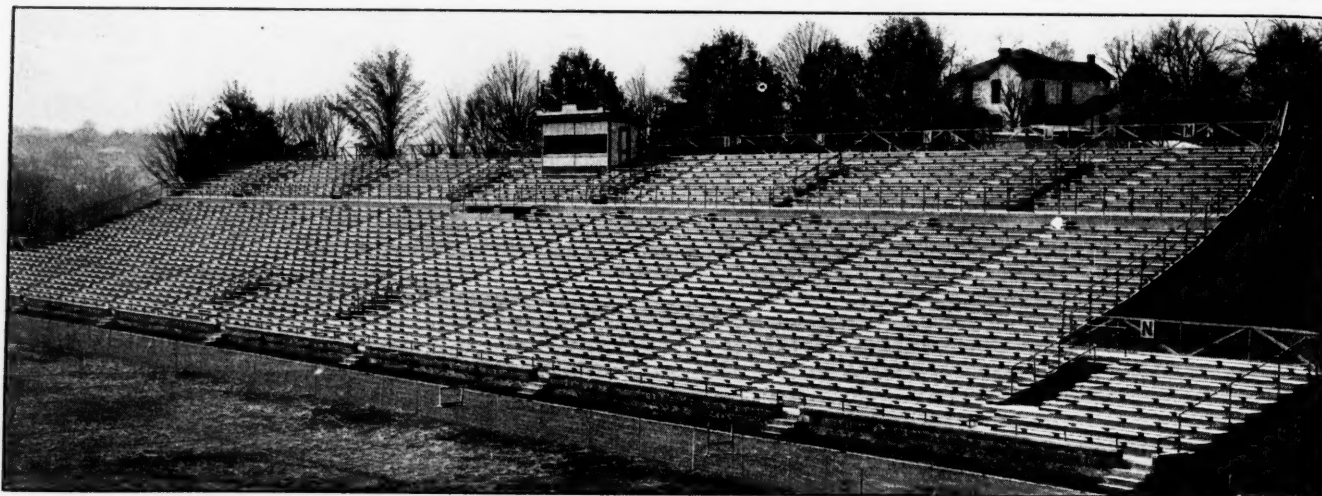
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**PUBLISHERS DAILY CONSTRUCTION BULLETIN AND  
BLUE BOOK OF SOUTHERN PROGRESS**

Member, A.B.C.





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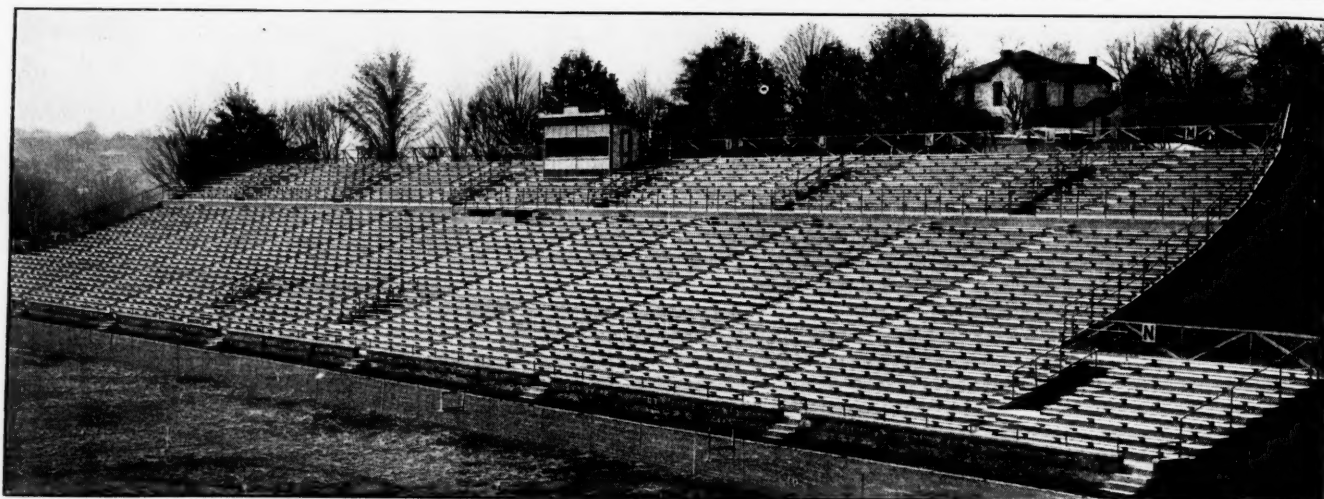
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S A L E S      C H A R T

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

# Long Distance helps refrigerator company increase sales for 18 months consecutively



*In one country-wide drive, Norge Corporation sells five trainloads, valued at \$1,500,000*

CERTAIN COMPANIES today are forging steadily ahead. Almost invariably, they are consistent users of Long Distance. They find it an effective and economical way of meeting changed conditions . . . increased use of the service resulting not only in stimulated business but in lowered general costs as well.

The use of Long Distance by the Norge Corporation is typical of that made by other successful companies, large and small. *"Today, more than ever, we frankly recognize the value of Long Distance,"* says Howard E. Blood, President of the Company. *"The savings it effects, and the results it achieves, make it one of our most profitable business tools."*

"For example, one country-wide drive, which was conducted largely by Long Distance, resulted in the sale of five trainloads of refrigerators, valued at \$1,500,000. We recently reported the eighteenth consecutive monthly increase in sales, and for the first half of 1932 our volume of business was substantially the same as for the entire

year of 1931. Unquestionably, this reflects our consistent use of that most expedient tool, the telephone."

Almost constant telephone contact is maintained between headquarters of the company in Detroit, district managers at various points, and distributors and salesmen throughout the country. Executives cover the country in minutes, without leaving their desks. Through frequent and consistent use of Long Distance, they transact business at large savings in time and money.

Best results are obtained from the *planned* use of Long Distance. Let a representative of your local Bell Company develop a complete telephone plan for *your* company.

## LONG DISTANCE RATES ARE LOW

Typical Station-to-Station Rates

From	To	Daytime	7:00 P.M.	8:30 P.M.
Detroit	Cleveland	\$ .60	\$ .50	\$ .35
Boston	New York	1.00	.85	.60
Atlanta	Chicago	2.35	1.95	1.30
Los Angeles	Denver	3.25	2.65	1.75
St. Louis	Seattle	6.50	5.25	3.75

Where the charge is 50c or more, federal tax applies

JUST CALL YOUR BELL



TELEPHONE BUSINESS OFFICE

FOR  
THE WINDOWS  
OF THE NEW ...

Architects—Mauran, Russell &  
Crowell. Contractor—Westlake  
Construction Co.



ST. LOUIS GLOBE - DEMOCRAT BUILDING

*the architects chose Pennvernon*

The unusual transparency and brilliance of this window glass make it the ideal glazing material.

THE new St. Louis Globe-Democrat Building is one of the finest publishing plants in the world, both in equipment and beauty. Before breaking ground for this structure, the architects, Mauran, Russell and Crowell, and the Globe-Democrat executives, spent two years in a thorough study of how this newspaper plant could be made most efficient and most beautiful. To lend the final touch of beauty to a beautiful edifice, the architects specified that the building be glazed throughout

with double strength, "A" quality, Pennvernon Window Glass.

Manufactured by an exclusive new process, Pennvernon has no chance of becoming bowed, flawed or defaced. It is kept perpendicularly flat throughout its making—from melting tanks to finished sheet. The result is a window glass extraordinarily transparent and bright in finish, and remarkably free from distorting defects. Furthermore, Pennvernon has no "wrong" side. It may be glazed either side out.

Best of all, highly modern factories and unusually fine facilities for production and distribution, make it possible to obtain Pennvernon at no extra cost.

For greater beauty in the buildings you design, specify Pennvernon Window Glass. Pennvernon is available, in single or double strength, and in thicknesses of  $\frac{3}{16}$ " and  $\frac{7}{32}$ ", at the warehouses of the Pittsburgh Plate Glass Company in all principal cities, through progressive glass jobbers and leading sash and door manufacturers. Write us for samples to examine. Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Penna.

Bright, clear, and unusually reflective are these Pennvernon Windows of the new Globe-Democrat Building in St. Louis.



Pennvernon  
Window Glass



# Laying Cast Iron Water Mains *helps bring back good times*

Read these statements by leaders in the basic industries involved in the production, transportation and laying of cast iron pipe.

## **A Railroad President\***

"I look upon the success of the cast iron pipe industry as of great consequence to the railroads. Not only is your product of outstanding value to the purchaser, but the freight involved, both on the raw and finished product, is an important source of revenue to all carriers."

## **A Large Contractor\***

"I personally know that many cities are in need of water works construction involving cast iron pipe. If this work can be started before winter sets in it will go a long way to ease local unemployment situations."

## **Coal Mine Executive\***

"We mine 275 tons of coal in order that 100 tons of pig iron can be produced which in turn yields 100 tons of cast iron pipe. The use of cast iron pipe is, therefore, important to employment and prosperity in the coal industry."

## **President of Iron Ore Mining Company\***

"This basic industry is suffering from curtailed demand for cast iron pipe resulting from the difficulty in marketing municipal securities. I refer to cast iron pipe particularly because nearly 300 tons of iron ore are required to make the pig iron used in 100 tons of cast iron pipe."

## **President of Large Pipe Foundry\***

"To produce and lay 100 tons of cast iron pipe requires the labor of 740 men for a day, in all the industries involved. I estimate that to produce the cast iron pipe now needed for water works construction alone would give steady work to 100,000 men and involve the circulation of \$150,000,000 within a year for the general stimulation of trade."

\* Names on request



Look for the "Q-check" symbol as shown above. It is the registered trademark of The Cast Iron Pipe Research Association.



Copyright 1932, The Cast Iron Pipe Research Association

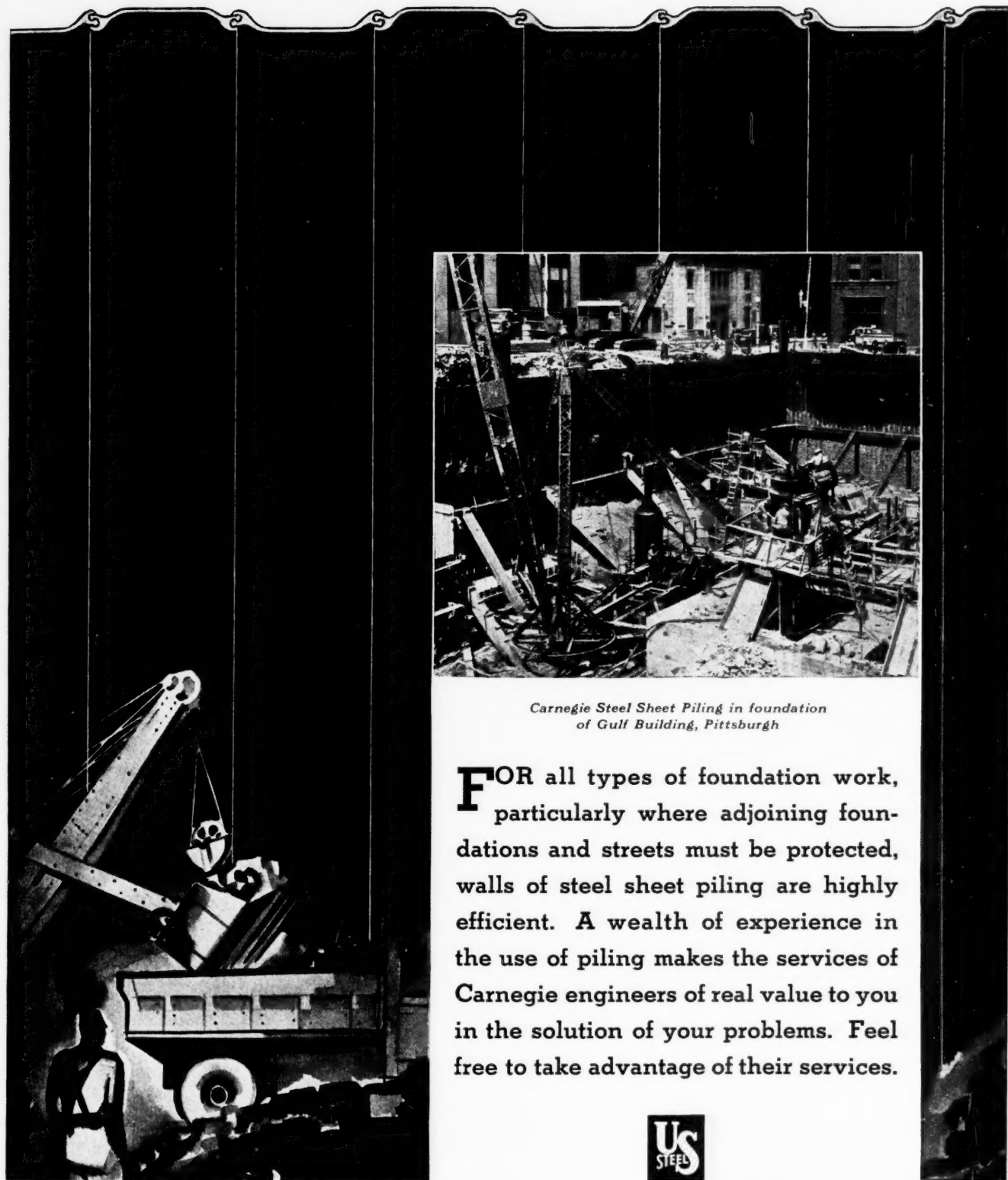
By the immediate purchase and installation of cast iron water mains your city can help its citizens and the nation push over the line to prosperity.

This country needs enough water works improvements to give work to thousands of men locally and elsewhere in the industries involved in producing, transporting and laying pipe. (See column at left).

These permanent improvements, benefiting everybody, can be made without increasing taxation. Municipal water works systems are self-supporting and improvement costs can be liquidated out of the departments' earnings.

Cast iron mains are the most economical because they last longest. Their useful life is more than a century. For further information, write to The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 122 South Michigan Avenue, Chicago, Ill.

# WALLS OF STEEL



*Carnegie Steel Sheet Piling in foundation  
of Gulf Building, Pittsburgh*

**F**OR all types of foundation work, particularly where adjoining foundations and streets must be protected, walls of steel sheet piling are highly efficient. A wealth of experience in the use of piling makes the services of Carnegie engineers of real value to you in the solution of your problems. Feel free to take advantage of their services.



## CARNEGIE Steel Sheet PILING

*Product of CARNEGIE STEEL COMPANY, Pittsburgh, Pa., Subsidiary of United States Steel Corporation*

207



# Meeting the Demands of HIGH SPEED HEAVY FREIGHT



**H**IGHER speeds, heavier loads, more exacting standards of safety in railway operation are placing ever-increasing demands on every item which enters into track construction. Tennessee is keeping abreast of those demands with quality track materials of unquestioned integrity.

Tennessee rails, joints, tie plates, bolts, spikes and other products offered to the transportation industry are produced with but one thought in mind—that they fully measure up to modern standards and perform without failure their allotted tasks.

**Tennessee Coal, Iron & Railroad Co.**

General Offices: Brown-Marx Bldg., Birmingham, Ala.  
SUBSIDIARY OF UNITED STATES STEEL CORPORATION

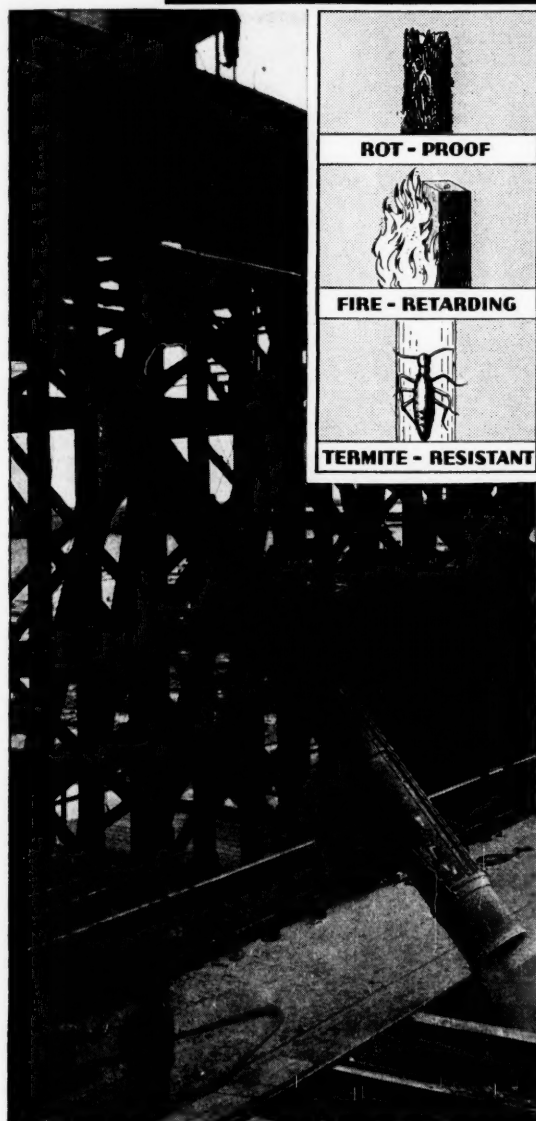


# TENNESSEE TRACK MATERIALS





# FOR MAXIMUM ECONOMY PRESERVE STRUCTURAL TIMBERS *with* ZINC CHLORIDE



The fire-retardant quality of Zinc Chloride-treated wood makes its use ideal for bridges, trestles, docks, etc. The above installation in excellent condition after 15 years during which replacements were unnecessary.



Naturally it costs a trifle more to treat your mill timbers with Zinc Chloride. But look at the facts. Every penny thus spent means *big savings* in the future!

## *Zinc Chloride Treatment Prevents ROT*

*Eliminates Needless Replacements*—Timbers protected with Zinc Chloride have *many times the life* of untreated timbers. They are *rot-proof, termite-resistant, and fire-retardant*.

*Reduces Cost of Timbers*—Sapwoods when treated with Zinc Chloride have equal strength and longer life than the more expensive heart-woods.

Zinc Chloride-treated wood is *clean, odorless, and as readily paintable as untreated wood*. It is ideal for mill, mine and structural timbers, trestles, highway fences, etc.

It has no disadvantages and many economies. You cannot afford to overlook its superior merit.

## THE GRASSELLI CHEMICAL COMPANY CLEVELAND INCORPORATED OHIO

New York and Export Office: 350 Fifth Avenue

BRANCHES IN PRINCIPAL CITIES

ALBANY	CHARLOTTE	DETROIT	NEW ORLEANS	ST. LOUIS
BIRMINGHAM	CHICAGO	MILWAUKEE	PHILADELPHIA	ST. PAUL
BOSTON	CINCINNATI	NEW HAVEN	PITTSBURGH	SODUS, N.Y.

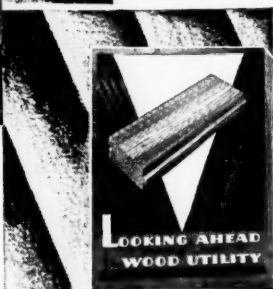
There are commercial treating plants located conveniently near you. They will gladly furnish estimates on the cost of treating your timbers. Write us for their names if you wish.

- Send for this free, illustrated book about the advantages of the Zinc Chloride treatment of wood and the valuable economies in mill construction and maintenance.

THE GRASSELLI CHEMICAL COMPANY  
629 Euclid Ave., Cleveland, Ohio

Please send me, without cost or obligation, your booklet, "Looking Ahead Twenty Years in Wood Utility."

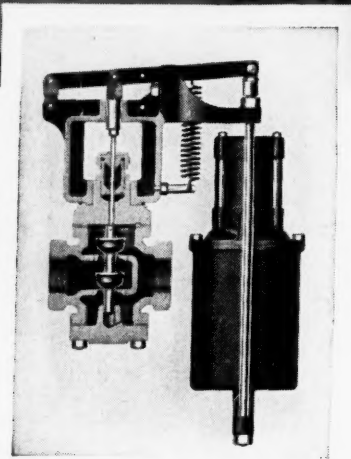
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Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_



# Z GRASSELLI INC CHLORIDE

*A Positive Preventive of DECAY in Mill Timbers*

# Why THRUSTOR Valves?



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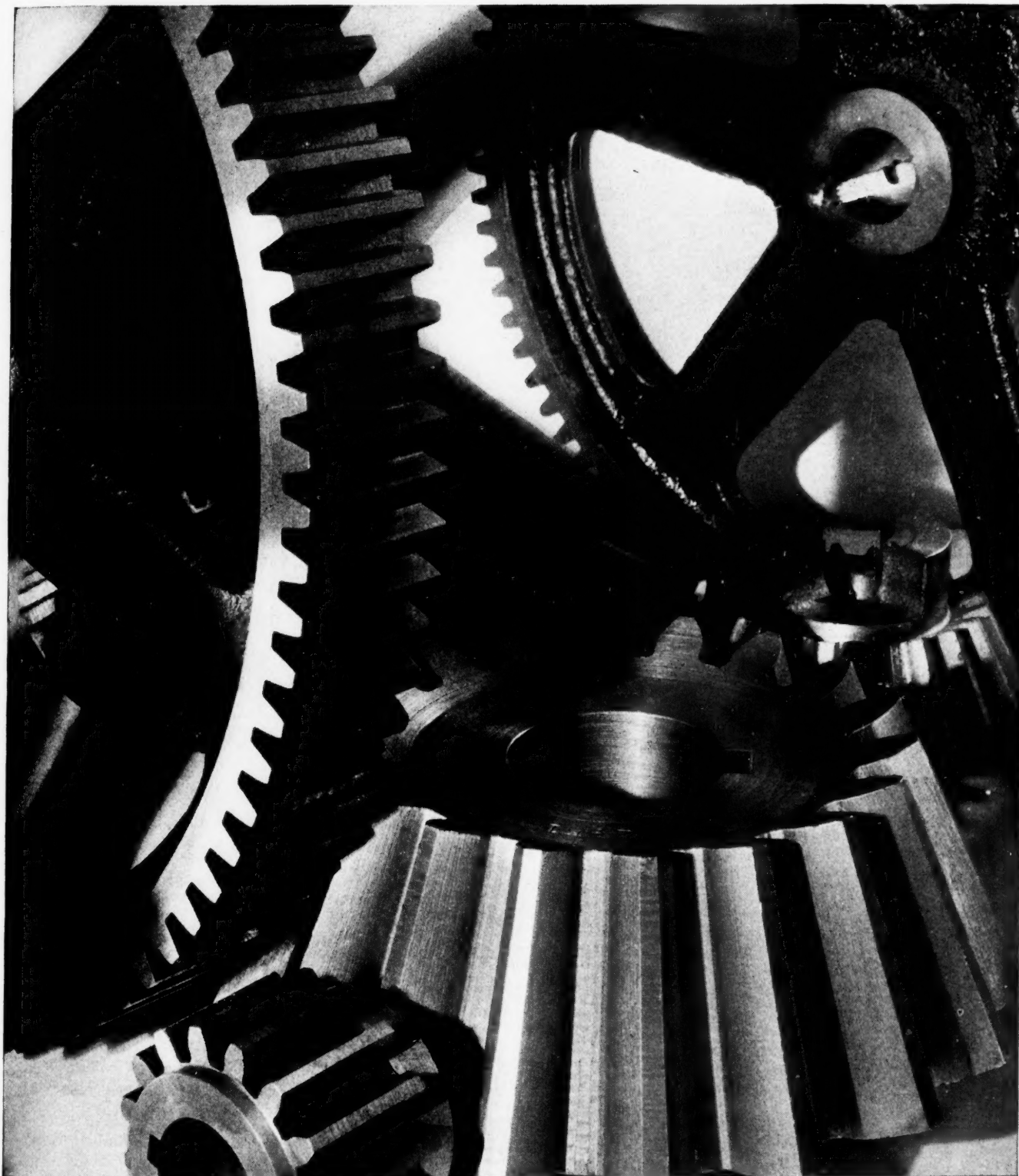
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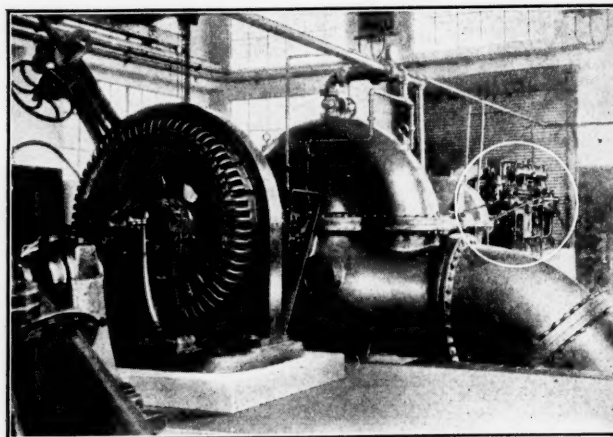
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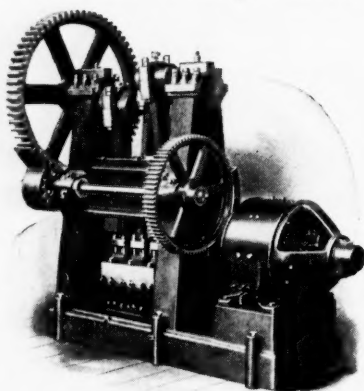
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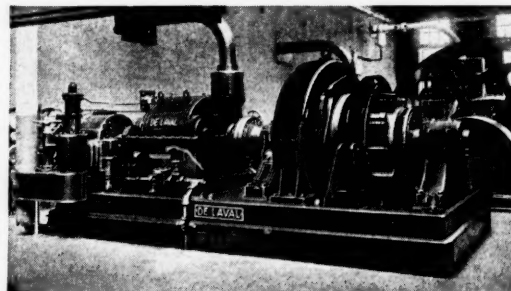
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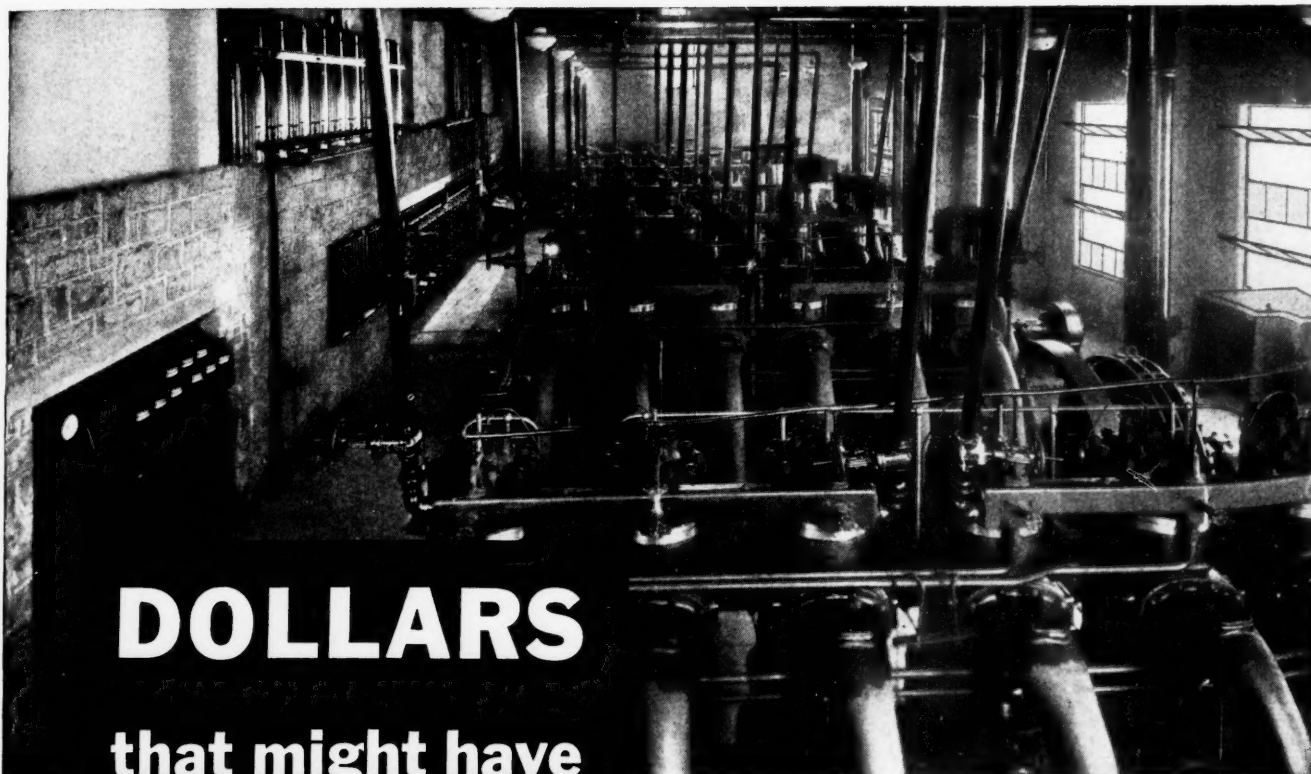
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—but what are you going  
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**W**HAT are your thoughts going to be as you look over the audit of your business for this year? Where might you have made changes that would have taken dollars from operating costs and have put them in the profit balance?

Scan your *power* costs carefully! If next year, you could reduce those same costs by thirty, forty or fifty per cent—how much would you profit?

Have you ever had the figures on the ex-

*Six 360 h.p. F-M Diesel engine generating units supply the current requirements of the Price Hill Colliery at a substantial saving over purchased current or steam power.*

tremely low cost of power when produced by the modern Diesel Engine? Perhaps you are one of the many who have considered only the traditional sources of power during a profitable period of operation. But *now* that is in the *past*. Your business must have a *future*. And a sound future can only be successful in taking advantage of the *new*, more *economical* production methods.

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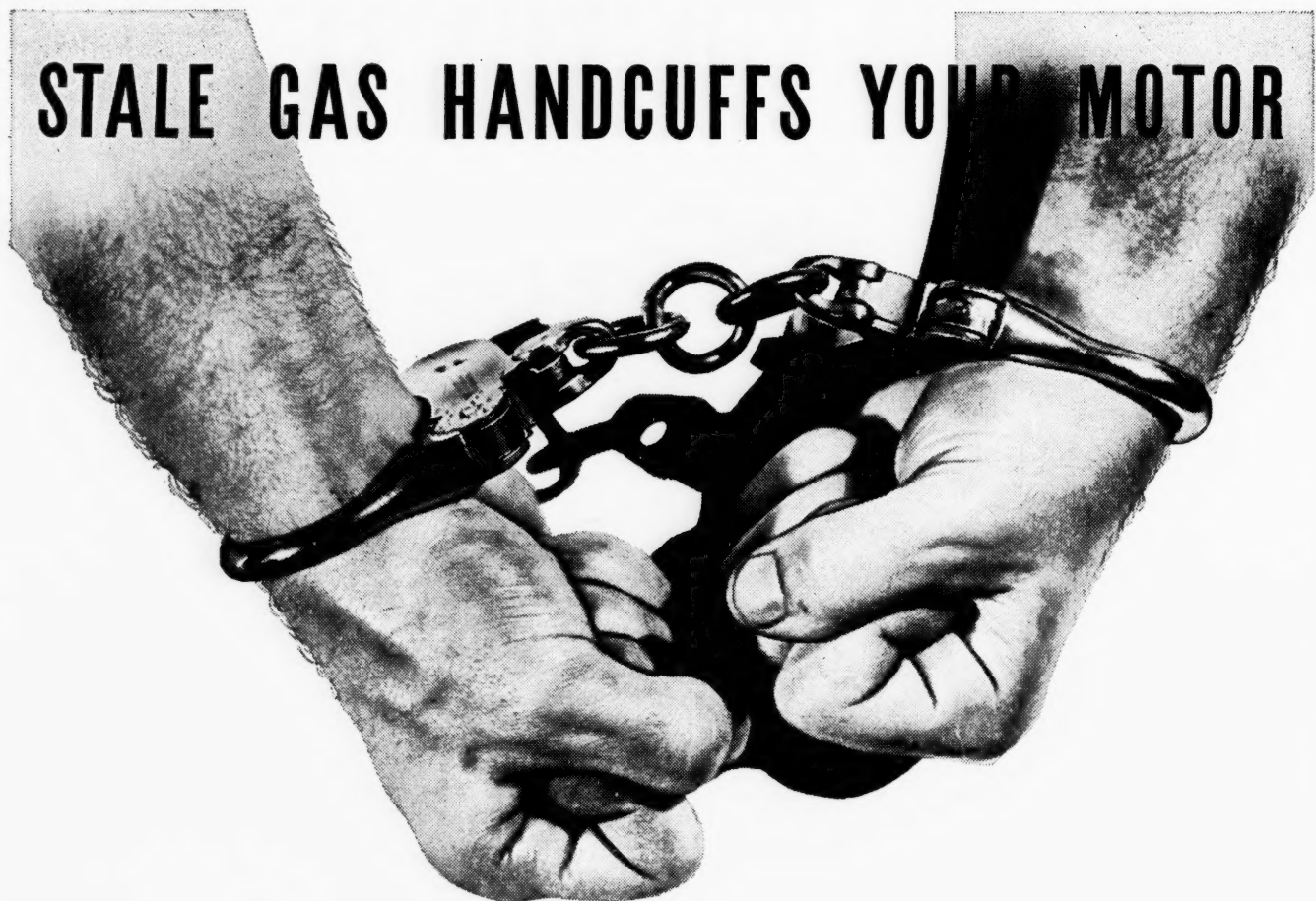
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## ONLY *fresh* GAS UNLEASHES FULL POWER

Staleness steals the power of gasoline. Little by little, the lighter parts—important “easy starting” elements—evaporate! Also a physical change takes place—so that, *as staleness increases, power decreases!*

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The whole petroleum industry has long sought a way to stop

gasoline deterioration. Now Gulf announces a system that assures every motorist of getting FRESH-MADE gasoline! How?

By making the best possible gasoline and *refining out* the elements (unsaturated hydrocarbons) that cause fast deterioration.

And by rushing this FRESH gas to you like some perishable food!

SPEED! The whole Gulf organization is geared to it. Huge

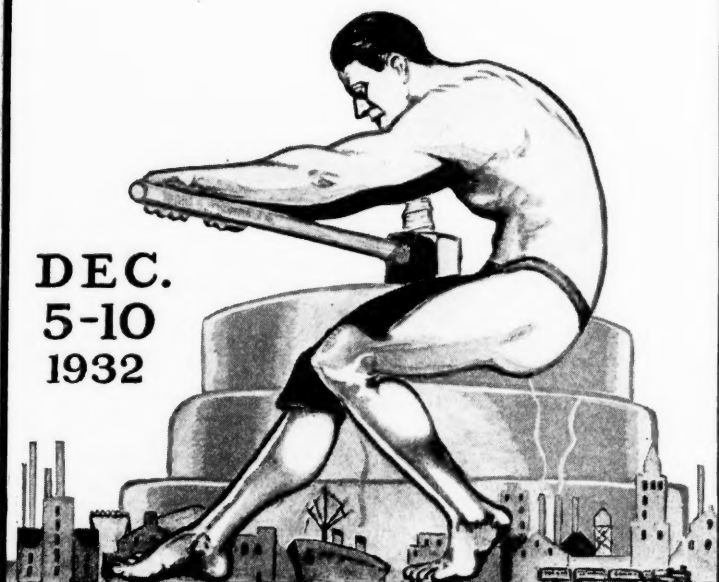
Gulf refineries in many sections of the country put every Gulf filling station close to a source of FRESH gasoline. A vast fleet of tank trucks speed FRESH gas to Gulf pumps every day.

Get FULL power for your gasoline dollar. Get FRESH-MADE gas—delivered FRESH. Get Gulf exclusively—and you’ll have a motor that’s faster. A motor that’s cleaner. And quieter.

get THAT GOOD **GULF** GASOLINE—*it's fresh*



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• **for**  
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Whether or not immediate investment in new equipment is contemplated, study must go on, for when the order comes to "Forward, March!" there will be no time to fumble. Men must know that men may do.

Who will know? High in their ranks will be those who attend and make the most of the exhibits at this outstanding NATIONAL Biennial Exposition. Only here, at New York, every other December, does such an opportunity open. And this is the year!

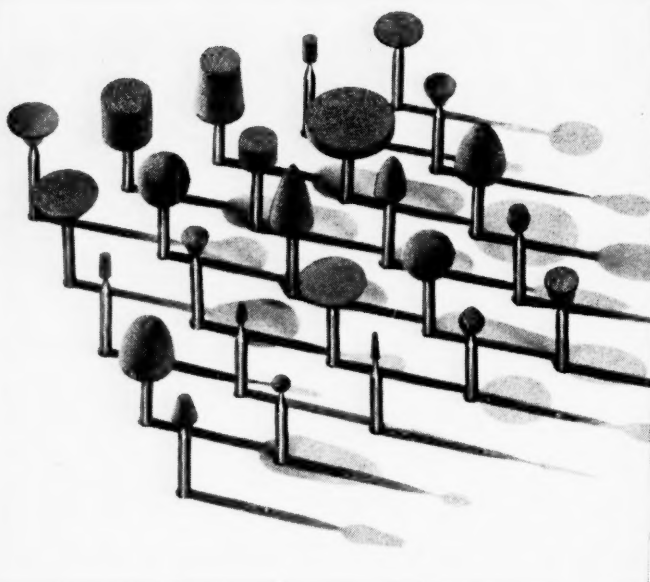
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# • Manufacturers Record •

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## CONSTRUCTIVE STATESMANSHIP DEMANDED

A PRESIDENTIAL campaign draws to a close. The Administration and the Legislative bodies in power afterward will have a serious responsibility to remove the remaining obstacles to sound economic well-being and to adequately safeguard American industry.

The Federal budget must be balanced; not by higher taxes alone; but by drastically reduced government expenditures. The annual income of the American people has been reduced to approximately \$50,000,000,000 as compared with \$90,000,000,000 several years ago. The total cost of Federal, State and local government, amounting to approximately \$14,000,000,000 in 1932, must be materially lessened before business can approach a prosperous condition. In 1932 Federal Government expenditures alone amounted to \$5,006,000,000, while receipts for the fiscal year were \$2,121,000,000, leaving a deficit of \$2,885,000,000. In the first three and a half months of the new fiscal year beginning July 1, the deficit amounted to \$554,000,000. It is clearly evident that in view of greatly reduced revenue still greater government economy is an urgent necessity.

A contributing cause to the excessive cost of government and a decided evil in itself, is the increasing competition of the Federal Government with private business interests. The functions of our Federal Government, as conceived by the founders of this nation, were political and not economic. It is not fitted by nature or organization to engage in manufacture or commerce, although it has done so in a surprisingly large number of instances. The Shannon Congressional Committee, investigating Federal competition with private business enterprise, finds that "the Government is in too many lines of business in competition with its citizens and should begin to withdraw." This competition is grossly unfair because of the peculiar advantages which the Government enjoys. Federal operations are carried on without regard to

profit or loss. Charges for depreciation or interest are rarely made in any Federal enterprise. When the Government loses in any undertaking the taxpayer pays the bill. To enumerate a few of these activities, the Federal Government owns and operates the world's largest printing plant, manufactures steel and clothing, builds ships, runs cafeterias, dairy farms, barge lines, laundries and dry cleaning plants. Through the Reconstruction Finance Corporation and Home Loan banks the Federal Government has become the nation's greatest banker. The latter two are desirable and even necessary as temporary expedients, but continued after their immediate purpose has been fulfilled tend to paternalism.

The trend is decidedly toward more government in business. Growing Federal control of railroads, water transportation and power companies has reached a point, in many instances, where private profitable operation is extremely difficult, placing capital investments in serious jeopardy. It is but a step from this stage to government ownership. By restricting government activities in industry, taxes and operating expense can be materially reduced. Many opportunities for graft and mismanagement could be eliminated and private industry would have a much better opportunity to operate at a profit. The benefits would be manifold.

If American living standards are to be maintained and American industry is to operate without fear of foreign below-cost-production, there must be an adequate tariff to take care of the dumping of foreign products in our markets and to allow for the depreciated currencies of countries abroad, with whom we trade, which have abandoned the gold standard. The United States is the greatest free-trade country of the world. We have the unparalleled advantage of dealing among 48 principalities without trade restrictions of any kind. Less than 10 per cent of our total annual business is done abroad. It is particularly vital to consider every means for the proper protection of American industry from foreign competition that would reduce our scale of living, and to devote



every effort toward the stimulation of business at home by encouraging the utmost development of our domestic markets.

The MANUFACTURERS RECORD has frequently discussed the advantages to be derived from a general sales tax to be substituted for a number of the unfair, discriminatory taxes now in existence. The effect would undoubtedly be beneficial to a number of lines of business upon which taxes are now levied while others go free. A general sales tax would have the broadest possible base; it would spread the burden over our entire population. Each individual would take a keener interest in government expense since he would be paying his proportionate share and be aware of it as he did so. It offers the fairest method that the government can adopt to secure its necessary revenue.

All of these questions deserve the earnest thought and consideration of Congress this winter. Their proper discharge is a major responsibility of government to the greatest possible advancement of domestic industry.

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## A BUYING MOVEMENT

THE nation-wide effort to promote the rehabilitation of industry by modernizing and repairing plants and equipment is essentially a buying movement. In the October issue of the MANUFACTURERS RECORD it was shown that industry would have to spend approximately \$30,000,000,000 for improvements to make up for the decrease in expenditures for such purposes during the last three years. This is in addition to general consumer deferred buying estimated at \$40,000,000,000. This expected industrial activity is the outgrowth of the efforts of a group of bankers and business men to speed business recovery by securing concerted action on the part of industry to help itself and increase employment. Its sponsors, under the guidance of the Committee on Industrial Rehabilitation, urge industrial executives to rehabilitate their plants, on a basis of self-interest, to protect their own earnings.

Regional, State and local committees are being formed. From its inception the plan has been favorably received and rapid progress is predicted as soon as the various committees begin to function in their respective communities. They form an organization that will bring together the industrial and business leaders of the country and it is expected a program to initiate orders for equipment, machinery and plant facilities will promptly result.

The objective of the Committee is to spread facts that will hasten the return of confidence which has delayed expenditures for plant maintenance in the last three years.

Farsighted management with available capital has been alert to the value of making such expenditures in these times. Others with depleted reserves, recognizing the importance of making needed improvements, have not been able to secure the necessary

funds. Without additional credit these individual plants cannot take advantage of the opportunity to modernize and thus reduce operating cost which would enable them to earn a profit. This phase of the Rehabilitation movement should be given close study by the investment and credit organizations of the country. Likewise, many producers of materials and equipment are not in a position to extend credit for productive improvement programs and here again the active cooperation of the financing concerns of the country is needed for the successful conclusion of the plan.

A most important phase of the industrial buying movement that should be given careful consideration by executives is adequate advertising. Unless individual plant management is informed of the improved methods and equipment through which it can reduce operating costs, it will fail to appreciate the necessity for making such expenditures. The real need for industrial advertising is shown in two examples among a number of inquiries which have come to us as a part of the service department of the publication.

"Please give me the names of manufacturers of —. I have seen them advertised at various times in magazines but am unable to locate any of these advertisements now."

"I am in the market for a — machine and find that there are no advertisers listed."

Manufacturers are bemoaning dull business but many of them are failing to use the business creating force of advertising. The ultimate success of the whole industrial rehabilitation and buying movement is dependent in large part on aggressive and sustained advertising.

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## RADICAL ALIENS

THE ranks of the Communists in America might be thinned out considerably if the aliens among them were deported. The parlor pinks classified so fully by the Lusk Committee of some years ago and designated as undesirable are perhaps to a considerable number, citizens of the United States and are not so easily banished. But it would be better for the country if the entire lot could be shipped away at a time when the problems we are facing are serious enough without being aggravated by strife stirring malcontents. China and India, and other countries have been in turmoil because of them. Conditions in England are being gravely aggravated by their incitements.

The United States will do well to ship away at least all aliens who are opposed to law and order and government and whose activities at the moment when unemployment and want are seen in all sections are directed to strife and disorder. Congress will do well to give early attention to a situation already grave that is getting graver. If present laws do not cover the need, a new law should be enacted.

Aliens should be made to register and periodically report to the authorities as other countries require. Identification of criminal agitators is thus made easier.

## \* PLANNED PRODUCTION

**T**EXTILE manufacturing, as one of the first industries to experience an upturn, has increased its output so rapidly in recent months that the fear of possible over-production is again in the minds of some of the industry's leaders who caution against any policy pursued by individual operators that would undo the gains made.

Commenting on this point, K. P. Lewis, president and treasurer of The Erwin Cotton Mills Company, Durham, which operates six mills in North Carolina, writes:

"We have read with interest the article in your October issue on 'The Textile Outlook.'

"We feel that the textile situation is better than it was several months ago, and most of the mills are running practically full. Unfortunately, a large part of the business on their books was taken at a loss. While prices were raised, during the recent large buying movement, not very much more than the rise in cotton, since the drop in cotton prices many mill managers have shown a weakness in their price ideas and the industry is threatened with losing any benefit that has come from larger sales and a higher price basis.

"Another unfortunate feature is the eagerness with which many mills have started up night operations. Unless general business shows a considerable improvement, it is feared that the production will be heavily overdone. It is hoped that the sufferings of the industry during the past two years may make mill management watch its stocks more carefully and refrain from filling up its warehouses with goods. The great amount of goods that were bought have not yet been passed on to the consumer and the recent lowering tendency in prices after so many goods had been sold is disheartening to those who are trying to get prices to a profitable basis."

Speaking before the annual meeting of the Cotton-Textile Institute on "The New Economic Strategy," Howard Coffin, one of the pioneer automobile manufacturers of the country and chairman of the Committee on Munitions, Manufacturing and Industrial Relations and member of the Advisory Commission of the Council of National Defense during the World War, made this pertinent observation:

"Planned productions must in the future be balanced against accurately estimated market consuming powers. Selling below the reasonable cost of finished products must become definitely recognized as the most destructive of all trade practices, ruinous to capital, oppressive to labor and false to the common public interests."

Referring to the early days of automobile manufacturing which because of its newness developed problems of production, management and distribution that seemed insurmountable in creating a stable industry, Mr. Coffin told of the successful efforts to bring about standardized practices and cooperative understanding of business relationships that definitely removed the threat of constant litigation and brought order out of chaos.

As a newcomer in the textile field, but with 30 years' experience in other industries and in Government service during the war in developing national mobilization of production, Mr. Coffin urged the textile industry to greater cooperative efforts.

"The members of the Cotton-Textile Institute as the

responsible representatives of the nation's greatest manufacturing industry may quite properly assume the leadership in an attack upon the hampering restrictions which discourage economic planning by industry to meet the new conditions with which the whole business world is now faced. They should not throw into the discard those principles of cooperative effort so essential to constructive accomplishment."

It should be realized now that the only sound way for the industry to return to a prosperous condition is through continued cooperative maintenance of a balanced production program that will not exceed demand. The progress that has already been made came at a time that revived the spirit of all connected with textile manufacturing and stimulated business throughout the South. Every effort should be made to consolidate this position and to effect more profitable and continued operation at high levels.

The Southern lumber industry, which supplies over 40 per cent of the lumber cut of the country and dominates in that field, though not to the extent of Southern cotton manufacturing, is likewise cautioned. Anson C. Goodyear, president of the Great Southern Lumber Co., operating mills and by-product plants at Bogalusa, La., in discussing conditions in the lumber industry, writes the MANUFACTURERS RECORD:

"The encouraging feature is the great reduction that has been made in stocks of lumber on hand. Before it was possible to get this reduction, lumber prices throughout the country fell to a point where practically no manufacturer could get back the cost of his stumpage. In other words, apparently the only method by which reasonable business judgment can become effective in the lumber industry is to force prices down until a large number of operators simply cannot continue producing because of lack of money.

"It is quite evident that the volume of demand for lumber in this country will be lower than it has been in the past. At the same time, for the next few years, at least, the capacity for production will not be materially lessened. As the stock of lumber on hand is reduced, there may be and probably will be an increase in the selling price. If past experience is any guide, this increase is likely to be followed by an increase in production and if this occurs, prices will be forced down again unless an equilibrium of output and sales is maintained.

"It seems to me that there is one clear possibility of bringing prices to a level where we will no longer continue to throw away our capital and may make a reasonable profit. There is too much competition in selling lumber, and the cost of selling is too high. By sales combination well within the law, certainly a great improvement could be brought about. Such combinations have been discussed at considerable length during the past year or more, but so far little progress has been made—so far as I can judge chiefly because of the unwillingness of certain producers to give up some smaller advantage that they would enjoy individually for a larger advantage that they could obtain collectively.

"I see no real way out of the present situation than through sales combinations. The cost of production has been brought down to a level that would have been regarded as utterly impossible three years ago. Lumber producers have been efficient and effective individually, collectively they have failed to take steps necessary to bring about an orderly marketing of their product."

The situation in two major industries of the South, tending again toward an over-produced condition demands a closer cooperation of individual producers in their respective fields so that through a better balance of output to demand and more efficient distribution profitable operation can be achieved and maintained. Such cooperative action should be the goal of every division of industry, including agriculture which has felt the full effects of uncontrolled production.



# OVER-PRODUCTION AND ANTI-TRUST LAWS

By  
**Gilbert H. Montague**  
of the New York Bar

**Y**EARS ago, the whole nation laughed at the late General Fred Grant, because he remarked that "a surplus is easier to handle than a deficit." Today, the entire country



would hail as an economic messiah any man who could make that statement even approximately true as regards wheat, cotton, oil, sugar, rubber, coal, or any other of a score of commodities.

Modern civilization, struggling to save itself from its own excessive over-productiveness, offers a new problem to the anti-trust laws. These laws grew out of the centuries-old fear of an artificial scarcity of goods, resulting in exorbitantly high prices, and of curtailed employment, resulting from inadequate facilities for producing and distributing goods.

Today, the chief cause of unemployment is excessive duplication of producing and distributing facilities, resulting in an enormous over-supply of goods, and in ruinously low prices.

Price is the ultimate denominator into which all productive effort is translated. Wages can only be maintained by profitable business. Payrolls require money. Money can only be obtained by industry from the price of products.

Over-production means falling prices, and falling prices mean the ultimate inability to maintain labor and wages.

We are now witnessing the folly of prices below the cost of production of many basic commodities. Years ago we learned that cheap wages are not desirable from any economic standpoint. Perhaps the next lesson we shall learn will be that too cheap prices are not in the real economic interest of the body politic.

Certainly a better approach to the intelligent handling of a condition of over-supply would be to permit responsible producing and distributing agencies to

sit down and confer, and agree upon the steps necessary to maintain an equilibrium between production, distribution and consumption, rather than to prohibit by penal statutes any such exercise of ordinary, self-evident, intelligent co-operation.

For 20 years, the Supreme Court, in applying the anti-trust laws, has unswervingly followed two principles corollary to the "rule of reason," which the Supreme Court definitely adopted in 1911:

First, that the anti-trust laws must be interpreted in conformity with the changing conditions of economic life, and

Second, that transactions and agreements which, in earlier times and under former economic conditions, might have been held to be contrary to the anti-trust laws, may now be held, under present economic conditions, to be entirely lawful under those laws.

Public consciousness is becoming awakened to the folly of compelling, particularly in basic products, over-production beyond the possibility of economic assimilation.

## Lessons of the Depression

Out of the present depression is coming the realization that the public interest is not served by promoting excessively competitive methods. We have made in this country a fetish of competition and cheap prices. Perhaps we have now come to the point where we realize that our salvation must depend upon firmer prices and less competition.

No one could seek to justify extortionate prices against the public interest. This possibility, however, is no longer so real as it was in earlier times and under former conditions, when it gave rise to the anti-trust laws.

The present depression was not precipitated by the anti-trust laws, but these laws now lie squarely across the path of every plan to deal fundamentally with the major contributing cause of this depression, namely, the unbridled competition resulting from the vast expansion of our producing and distributing facilities without corresponding increase in the consuming capacity of the people.

Anti-trust laws are the vermiform appendix in the body politic—not generally talked about, nor a very enlivening topic when occasion requires that they be discussed, but always the determining factor as regards health or the lack of it,

and always the focal point at which mal-adjustment may lead to excess capacity of producing and distributing facilities, unbridled competition, catastrophic falls in commodity prices, unprecedented unemployment, economic losses that threaten our financial institutions and our entire capitalistic system, and other problems now paramount in the present economic depression.

## Proposed Changes

Dozens of ambitious proposals to revise and supplement these laws have for months been discussed in and out of Congress.

Here is an issue that bulked large in every Presidential election from 1896 to 1908, and overshadowed all other issues in the Presidential campaign of 1912, but today, in the midst of the greatest depression in history, seems likely to receive scant attention or none at all in the Presidential campaign about to close.

There are several reasons for this apathy.

Competition has until recently been the cornerstone of American economic, social and political philosophy.

The anti-trust laws have endured because they faithfully represented that philosophy, and with the course of years these laws have now become so firmly embedded in the economic, social and political life of the nation that many have thought them even more secure and unchangeable and sacred than some of the provisions of the Constitution.

## Views of Supreme Court

Here the thinking of the Supreme Court of the United States—instead of lagging behind public opinion as many uninformed business men, economists and lawyers are accustomed to assert—is today far in advance of the thinking of almost everyone else in America.

Since the first of January of this year, voices have three times come from the Supreme Court inviting in the most significant fashion a re-survey of our economic organization, and a re-consideration of the social and economic desirability of an "unrestrained competitive system."

"This is not the usual case of possible fluctuating conditions, but of a changed economic level," declared the Supreme Court on January 2, 1932.

"The effects of this widespread economic disturbance have had a progressive manifestation," said Chief Justice Hughes. "It is the outstanding contemporary fact, dominating thought and action throughout the country." Anything preceding it "pertains to a different economic era and furnishes no



adequate criterion of present requirements."

"The people of the United States are now confronted with an emergency more serious than war," said Justice Brandeis on March 21, 1932.

"Misery is widespread, in a time, not of scarcity, but of over-abundance. The long continued depression has brought unprecedented unemployment, a catastrophic fall in commodity prices and a volume of economic losses which threatens our financial institutions. Some people believe that the existing conditions threaten even the stability of the capitalistic system."

"Many persons think that one of the major contributing causes has been unbridled competition. Increasingly, doubt is expressed whether it is economically wise, or morally right, that men should be permitted to add to the producing facilities of an industry which is already suffering from over-capacity. In justification of that doubt, men point to the excess-capacity of our productive facilities resulting from their vast expansion without corresponding increase in the consumptive capacity of the people. They assert that through improved methods of manufacture, made possible by advances in science and invention and vast accumulation of capital, our industries had become capable of producing from thirty to one hundred per cent more than was consumed even in days of vaunted prosperity; and that the present capacity will, for a long time, exceed the needs of business. All agree that irregularity in employment—the greatest of our evils—cannot be overcome unless production and consumption are more nearly balanced."

Here is a denial of the assumption that monopoly and price control are the only evils against which the public interest must be protected.

Here is a challenge to the proposition that maintenance of competition is always a protection to the public interest.

Here is an assertion—epoch-making in American economic, social and political philosophy—that when producing and distributing facilities are vastly expanded without increasing the consuming capacity of the people, the maintenance of competition may be the prime evil against which public interest must be protected.

"Many insist that there must be some form of economic control," Justice Brandeis continued: "There are plans for proration. There are many proposals for stabilization. And some thoughtful men of wide business experience insist that all projects for stabilization and proration must prove futile unless, in some way, the equivalent of the certificate of public convenience and necessity is made a prerequisite to embarking new capital in an industry in which the capacity already exceeds the production schedules."

With these views expressed on March 21, 1932, Justice Brandeis carried with him only the concurrence of Justice Stone.

On May 16, 1932, however, the entire Supreme Court concurred in a unanimous opinion, which supported by some-

thing very closely resembling Justice Brandeis' reasoning the validity of an Oklahoma statute that set up a state authority to restrict petroleum production and competition in that industry to the limits necessary to prevent waste and to keep petroleum production in balance with transportation facilities, marketing facilities and reasonable market demands.

Perhaps out of the chaos that now exists, a new impulse along proper economic lines will be given to public thought and opinion. If such should be the case, we shall not have passed through our present period of travail in vain.

Out of the present welter of unemployment and ruinously low prices, resulting from excessive duplication of producing and distributing facilities and enormous over-supply of goods, some industry-wide agreements, whose purpose and effect are simply to correct the present unbalance of production, distribution and consumption, are almost certain to be brought before the Supreme Court for adjudication.

### New Interpretation

The Supreme Court's record since 1911 warrants the belief that, when the Court comes to decide these cases, the Court will not ignore the lessons taught by the present economic unbalance, but will again interpret the anti-trust laws in conformity with the changing conditions of economic life, so that transactions and agreements which, in earlier times and under former economic conditions, might have been held to be contrary to the anti-trust laws may, under present conditions of economic life, be held to be entirely lawful, because they are reasonable and necessary aids to a restored economic balance.

Anglo-Saxon tradition deters the American public from increasing governmental authority over business.

Pioneering in the unsettled zone of the anti-trust laws calls for exactly that nice balancing as between precedent, tradition, economics, history and philosophy which is judicial process in its purest form. For this task centuries of Anglo-Saxon civilization have developed the judiciary and the courts, building into them every endowment of method, training, dignity and prestige that can aid them in the exercise of its function.

Many believe that no commission created by legislative fiat can hope to duplicate this endowment, which for more than 140 years has been the common possession of the Federal courts. Many more believe that in this day of reduced governmental budgets it is extravagant to devolve upon a commission any of the work for which the judiciary and the courts have been created.

The history of most Federal bureaus and commissions is that they are con-

stantly beseeching Congress to increase their powers. Frequently this is in fulfillment of what these bureaus and commissions interpret to be their duty as regards recommendations to Congress for new legislation in their field. This duty has indeed been expressly laid upon the Interstate Commerce Commission by direct Congressional enactment. From a commission of strictly limited powers in 1887, the Interstate Commerce Commission has now grown to be a body of such vast administrative jurisdiction that one of its most far-sighted members has repeatedly prophesied that the logical consequence must some day be the public ownership and the public operation of the railroads.

It is not surprising, therefore, that in a large body of public opinion there is an inarticulate but deep-seated aversion to any increased governmental supervision of general business, and a fear lest any increased jurisdiction of the Federal Trade Commission, or the creation of any new commission, may lead to a vast administrative jurisdiction over general business, paralleling the Interstate Commerce Commission's present jurisdiction over railroads.

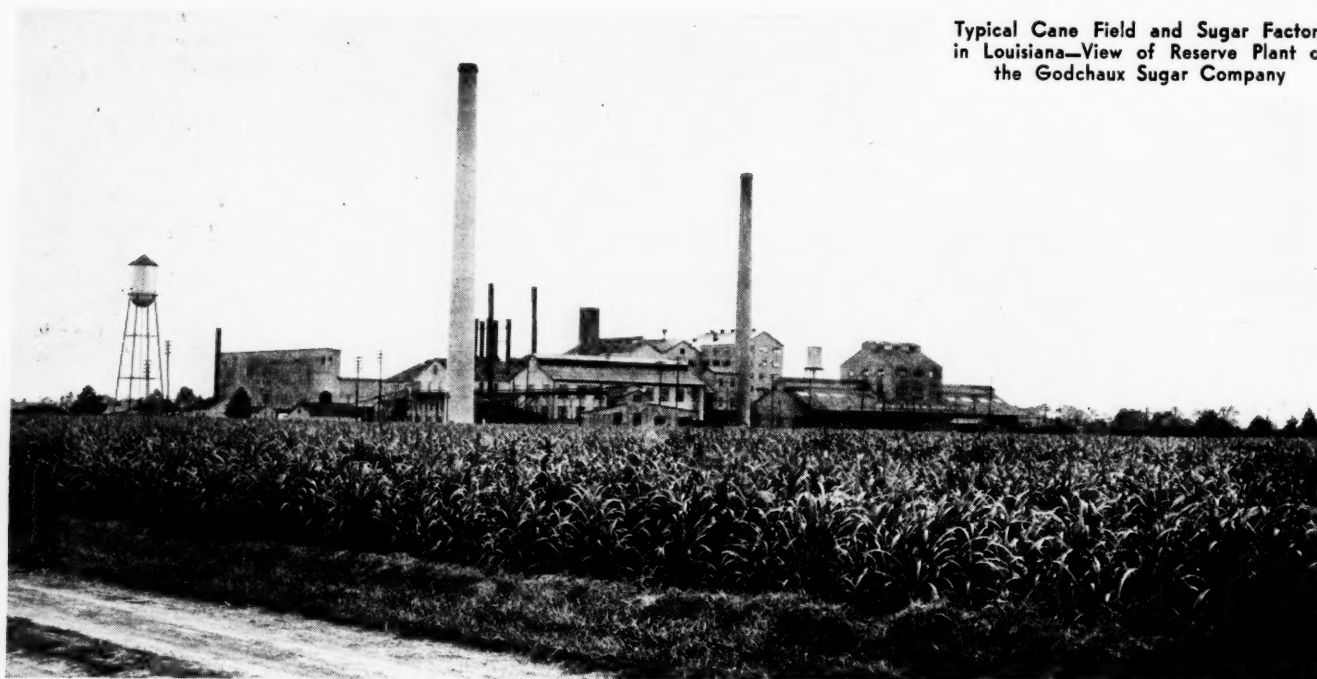
### Permissive Provisions

Many people believe that instead of a compulsory, dictatorial, fascistic economic control, a safer alternative would be a merely permissive provision added to the existing anti-trust laws, permitting business men if they so desire to make voluntary cooperative agreements with their competitors, regulating competition to the limited extent needed to prevent destructive competition and wastage of material and to restore a reasonable balance between production, distribution and consumption, and enabling the Federal Trade Commission after these agreements are made to investigate complaints regarding them in the same way that the Commission now investigates complaints under the existing Federal Trade Commission Act.

Such a measure would accord with Anglo-Saxon tradition which abhors increased governmental authority over business, and would avoid objections—which Justice Brandeis has conceded to be obvious and grave—that lie against compulsory, dictatorial, fascistic economic control, proration, stabilization, regulatory commissions, balancing of production and distribution with consumption, certificates of public convenience and necessity as a prerequisite to embarking new capital in an industry where capacity already exceeds production, and similar extreme remedies.

In the name of business there have been urged upon Congress some strange proposals for permanent and definitive changes in the status of business under government and the law.

(Continued on page 68)



Typical Cane Field and Sugar Factory in Louisiana—View of Reserve Plant of the Godchaux Sugar Company

# SOUTHERN SUGAR INDUSTRY

By

**B. O. Sprague**

President

Savannah Sugar Refining Corporation  
Savannah, Ga.

**A**PPROXIMATELY \$125,000,000 are invested in sugar cane growing and sugar making in the Southern States. In addition to producing companies which grow and grind their own cane, and manufacture the juice into sugar, there are in the South eight sugar refineries which buy the raw product from the plantations and turn it into granulated sugar. More than \$40,000,000 are invested in this refining industry, and in the neighborhood of 7000 men are employed daily to change the raw sugar into refined. The value of the output reached \$74,000,000 in 1929. About \$64,000,000 were expended for materials and power.

This huge and substantial industry is again being threatened by the subsidy granted to foreign sugar refiners in the Smoot-Hawley Tariff Bill. From January through June of this year, over 42 per cent of the sugar sold in Alabama was foreign and insular imported refined sugar, over 30 per cent in Florida, 13

per cent in Georgia, 14 per cent in Mississippi, 22 per cent in North Carolina, 34 per cent in South Carolina, 31 per cent in Tennessee, and 46 per cent in Virginia. Unless proper steps are taken by the Administration and Congress to eliminate the unfair competition, the great Louisiana and Florida developments will be, within ten years, a thing of the past.

## History of Sugar Development

Sugar is one of the oldest processed food products. Its origin as a food has been traced to India, as only the ancient literature of that country mentions sugar. In 627 A.D., at the time of the conquest of Dastagerd in Persia, sugar

was among the spoils taken by the Byzantines. From that time on, the art of making sugar out of cane spread rapidly. As sugar became more plentiful, a demand was created for better grades of sugar, and from this demand was gradually developed the highly organized and specially controlled sugar refining of today.

The development of a sugar making industry in this country dates back to about 1750. The remains of what is probably the first commercial sugar mill ever built and operated in the South is to be seen near New Smyrna, Fla., where in 1767 Sir William Duncan and Dr. Andrew Turnbull established a colony with the idea of producing sugar and indigo. The project was doomed to failure within a few years on account of an uprising among the indentured settlers, most of whom were from Minorca and Smyrna. Etienne DeBore is credited with being the first manufacturer of sugar on a large scale in Louisiana in 1794. The Hopeton plantation of James Couper in Georgia was the next development of note in the United States. It was on the Altamaha river five miles from Darien and sixteen miles from Brunswick. He erected a sugar factory in 1829 which continued in operation for some years. The Hopeton mill, most of which is still standing, was built on a scale considerably in advance of any sugar development then existing in the West Indies or Louisiana. The sugar industry was well established in Louisiana and Florida by the early part of 1800.

## Florida Sugar Industry

In 1850 Florida was producing 3,300,000 pounds of sugar annually. After

**\$125,000,000 Investment in Cane Growing and Sugar Making Industry of South Threatened by Practical Subsidy to Foreign Refineries Under Tariff Act**



its principal sugar factories were destroyed by Federal troops during the Civil War its production decreased to 1,142,000 pounds in 1870. In more recent times, following the Disston sugar development begun in 1880 in the Everglades region, but which failed about 1893 mainly because of the lack of proper drainage, much progress has been made although about 30 years elapsed between the Disston enterprise and the next attempt to manufacture sugar in Florida.

In 1920 two sugar projects were undertaken; one by the Pennsylvania Sugar Co., whose properties were located near Miami, and the other by the Florida Sugar & Food Products Company at Canal Point adjacent to Lake Okeechobee. The Pennsylvania company built a mill with a capacity of 1500 tons per day, and a small mill of 500 tons capacity was built at Canal Point. Both of these enterprises met with setbacks, due to lack of drainage facilities, but enough was accomplished to show that large tonnages of cane could be expected from well drained lands. In the Canal Point territory yields of 60 tons per acre were not unusual and the sugar content was satisfactory.

In 1925, the Southern Sugar Company was organized by B. G. Dahlberg, who acquired a large acreage on the Southwest shore of Lake Okeechobee. The Southern Sugar Company secured the

mill of the Pennsylvania company, dismantled it and reerected it at Clewiston, and also absorbed the entire holdings of the Florida Sugar Company, which included the sugar mill and the plantations as a going concern. Approximately \$20,000,000 to \$25,000,000 were invested in the Clewiston property.

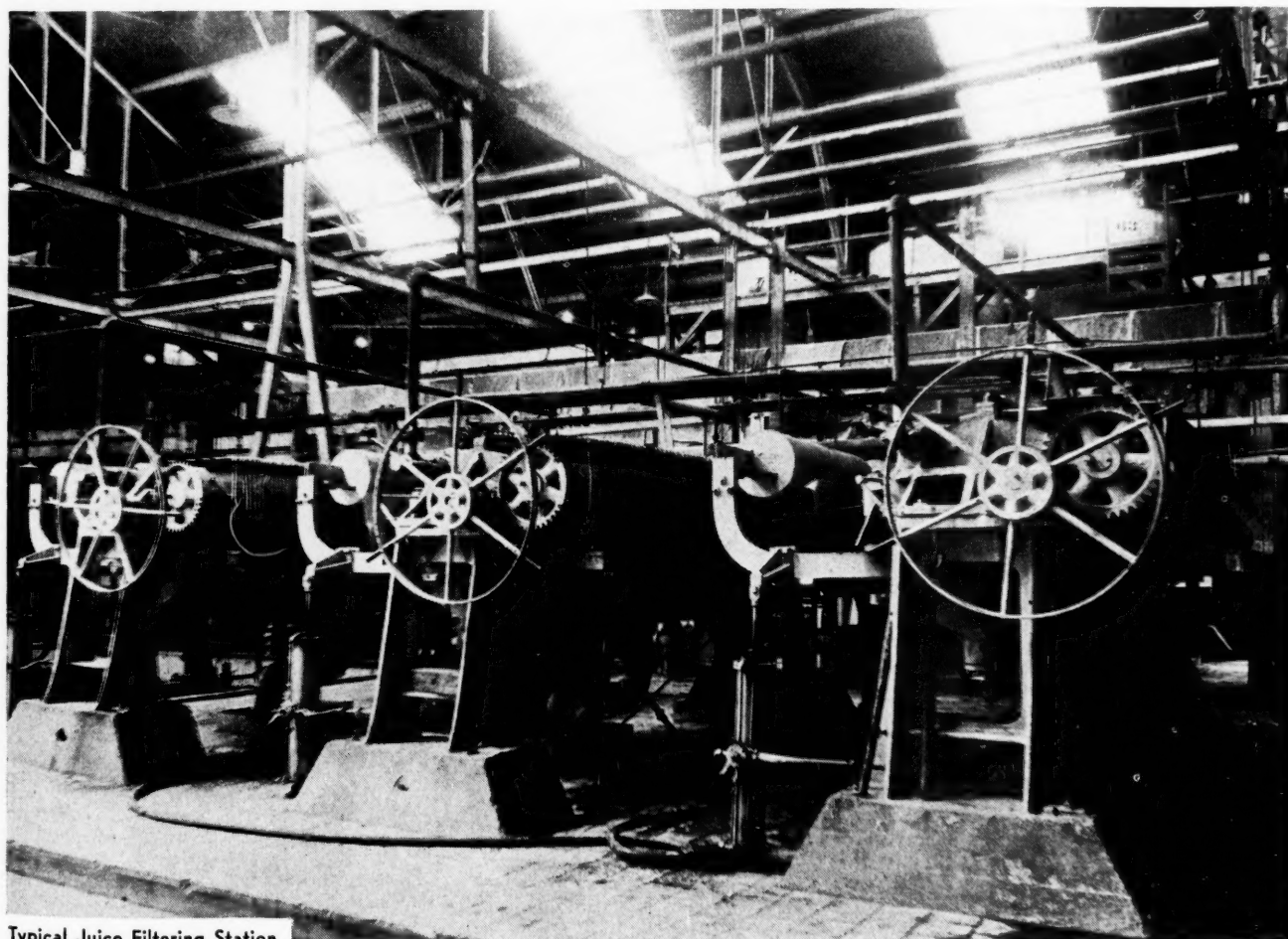
Mr. Dahlberg was the originator of Celotex, a building board made from bagasse, the refuse from the sugar cane after being ground. The Celotex Company was operating in Louisiana, but it was Mr. Dahlberg's desire to acquire an additional supply of bagasse, which was the reason for his selecting Florida to engage in the sugar industry. The operations of the Southern Sugar Company from 1926-1929, were constructive. Great attention was given to drainage, with the result that several drainage districts were established with up to date pumping facilities. Meanwhile the original 1500 ton mill had been enlarged to a capacity of approximately 4000 tons of cane per day, making it by far the largest and most efficient mill in Continental America.

The panic of 1929 resulted in the reorganization of the Southern Sugar Company, and it was acquired by the United States Sugar Corporation. This company produced over 25,000 tons of sugar the past season, which was refined at the Savannah Sugar Refining Corpora-

tion, which has a capacity of 1250 tons of raw sugar a day. The United States Sugar Corporation is now actively engaged in increasing its cane acreage, and taking advantage of the knowledge acquired during the last five years in the matter of selecting the right varieties. At the present time the Javan canes show the greatest promise in the Florida Everglades. C.P.H. 139, a Canal Point hybrid, bred and introduced by the Government Station at Canal Point, has given a yield of over 68 tons of cane per acre and over 200 pounds of sugar per ton of cane. There are other promising seedlings from which even better results are expected.

During the crop season 1931-32, the United States Sugar Corporation, on approximately 13,000 acres, harvested and ground about 300,000 tons of cane. The average sugar yield per ton of cane of 8.116 per cent established a record on the property. Over 47,000,000 pounds of raw sugar and 2,000,000 gallons of molasses were produced.

The 1932-33 crop season will be started with about the same acreage as last season. Tentative plans providing for additional acreage should supply the mill with close to 500,000 tons of cane during the crop season of 1933-34, which should enable the mill to operate at capacity for the entire harvest season.



Typical Juice Filtering Station





Warehousing and Handling Raw Sugars in a Modern Southern Refinery

During the peak of the 1931-32 season, 3762 persons were employed by the Corporation. Six towns, including Clewiston, having a population of over 8600, are largely dependent upon the operations of the Corporation.

The past harvest season has thoroughly and definitely proven the commercial possibilities for cane sugar in Southern Florida.

In addition to the 13,000 acres of land under cultivation, the Corporation has over 90,000 acres of other land which is either adaptable to the growth of sugar cane or winter vegetables, cattle raising, etc. It owns several miles of standard gauge railroad track and equipment. The Florida East Coast Railway Company and the Atlantic Coast Line Railroad Company have their railroads built and operating across the property. The sugar tonnage makes it possible for them to tap the agricultural resources of this region with its hundreds of dependent farmers on this outlet to the Northern market. It is probable that Florida will become an important factor in sugar production of the United States, since besides the present operating company there are one or two other projects that are now being considered.

### Louisiana Sugar Industry

Louisiana is the largest cane sugar producing state in the Union. Invest-

ment in plantations, grinding mills and refineries is approximately \$100,000,000. Five refineries are operating in the state.

Sugar cane was first introduced in Louisiana by the Jesuit fathers in 1751. For the first few years nothing but syrup was made from it, but in 1758 a small plantation mill was erected for the making of sugar. Other plantations were started but little progress was made for a number of years. Then in 1791 a new impetus was given to the industry by the introduction of better varieties of cane and in 1794 De Bore erected the first large sugar mill in the state. The industry now expanded rapidly. Seven years later New Orleans was the market for 200,000 gallons of rum, 250,000 gallons of molasses, and 5,000,000 pounds of sugar.

In 1830 Thomas A. Morgan introduced the vacuum pans, and this gave further impetus to the production of sugar. By 1832 the sugar industry had reached the high tide of its prosperity. There were

more than 700 sugar establishments in the state and the traffic of New Orleans was enormous. By 1861 the output had reached in round numbers 528,000,000 pounds of sugar and 34,000,000 gallons of molasses. Then came the Civil War, which paralyzed the industries of the South, and as late as 1870 the sugar crop was less than 100,000,000 pounds.

The area in cane in Louisiana for 1932 is about 200,000 acres out of a total of 320,000 acres of sugar growing lands, the balance of 120,000 acres is in corn and legumes. The number of persons employed in planting, cultivating and harvesting cane is at least 60,000, and about 14,000 are employed in the factories during the grinding season. A conservative estimate of the investment in the Louisiana sugar industry is \$80,000,000, not including sugar refineries.

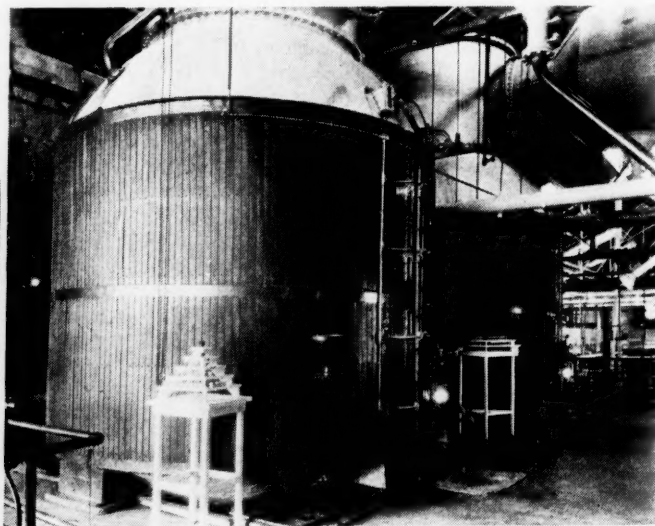
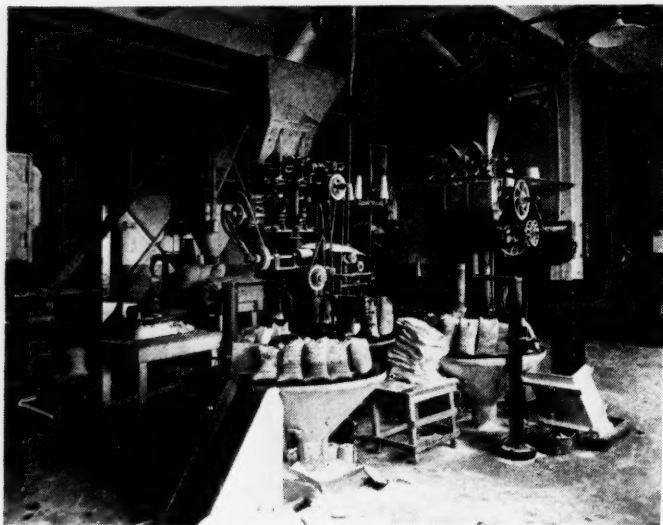
### Texas Sugar Industry

Attempts have been made to establish a sugar industry in Texas, especially in the Rio Grande Valley. One factory was established at Eagle Lake which ran about two years and another at San Benito which operated intermittently for about 15 years. Two modern sugar refineries are now operating in the state but they get their raw sugar from plantation mills located elsewhere.

### Difficulties Overcome

The Southern sugar industry has had many setbacks. It has overcome many difficulties in the past. Wars, panics, floods, plant diseases, and at times inadequate protection from cheap tropical imports have failed to destroy an industry that supplies an essential food product from a crop grown within the bor-

Automatic Machines Packing Sugar in Small Cotton Bags



Vacuum Pan Installation Where the Sugar Crystals Form From the Raw Juice

ders of the United States. The American people should protect this great domestic industry by correcting unwise legislation which permits unfair foreign competition with American growers and refiners.

# PLANT MODERNIZATION

By  
**Victor Buhr**  
Vice-President  
Equity Construction Company, Inc.,  
New York City

**P**LANT modernization will play an important part in the rehabilitation of industry. Manufacturers who expect to survive and prosper must recognize that modern facilities for production operations will form the backbone for aggressively meeting the problems of the future. Improved machines and equipment, now available at the lowest prices in a decade, will, in many cases, pay for themselves in a short period of time. With prices down and the necessity of maintaining or improving quality, a manufacturer cannot afford to struggle along with obsolete machines and methods which impose a constant extra cost on his product, thereby building up sales resistance.

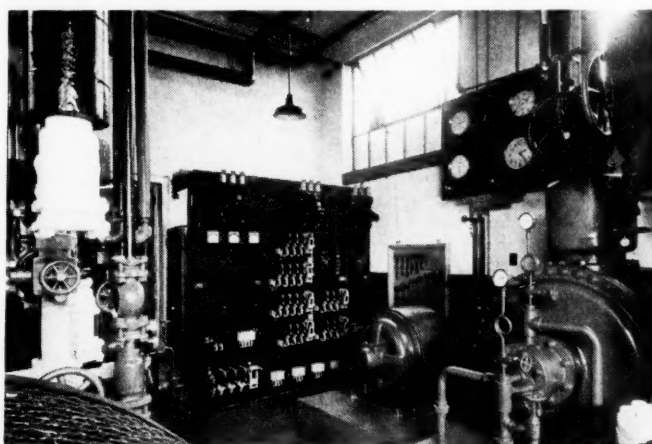
Today's problems of price cutting and unemployment would be considerably lessened if industry generally was modernized and more of an average state of efficiency maintained. Low cost

of production would establish profitable selling prices that would resist sales inroads by wreckless price cutters, and an efficient cycle of production designed to produce profits at any volume would insure normalcy in employment, avoiding considerably the labor turn-over between peak and lean periods and consequent unemployment.

Volume production of quality products generally means profits. What happens when this volume recedes to the point where profits are no longer possible, due to fixed production and plant charges? How many businesses are equipped to operate profitably on a sliding scale of production caused either by seasonal demands or general business conditions?

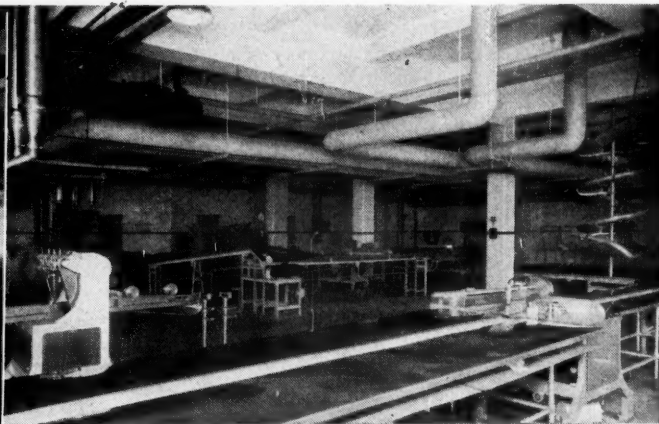
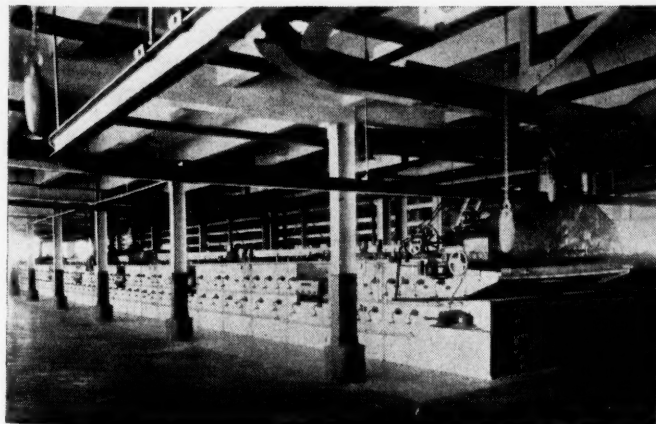
## Compactness of Layout Is Procurable Through Use of Modern Machinery

Engine room at the Furnas Ice Cream Company's new plant, South Bend, Ind., includes a Vilter rotary compressor, recently put on the market, which reduces floor and building space formerly required for machinery of equal capacity to about one-third. Modern electrical equipment, specially designed for the work required, keeps power costs to a minimum.



## An Ultra-Modern Baking Establishment

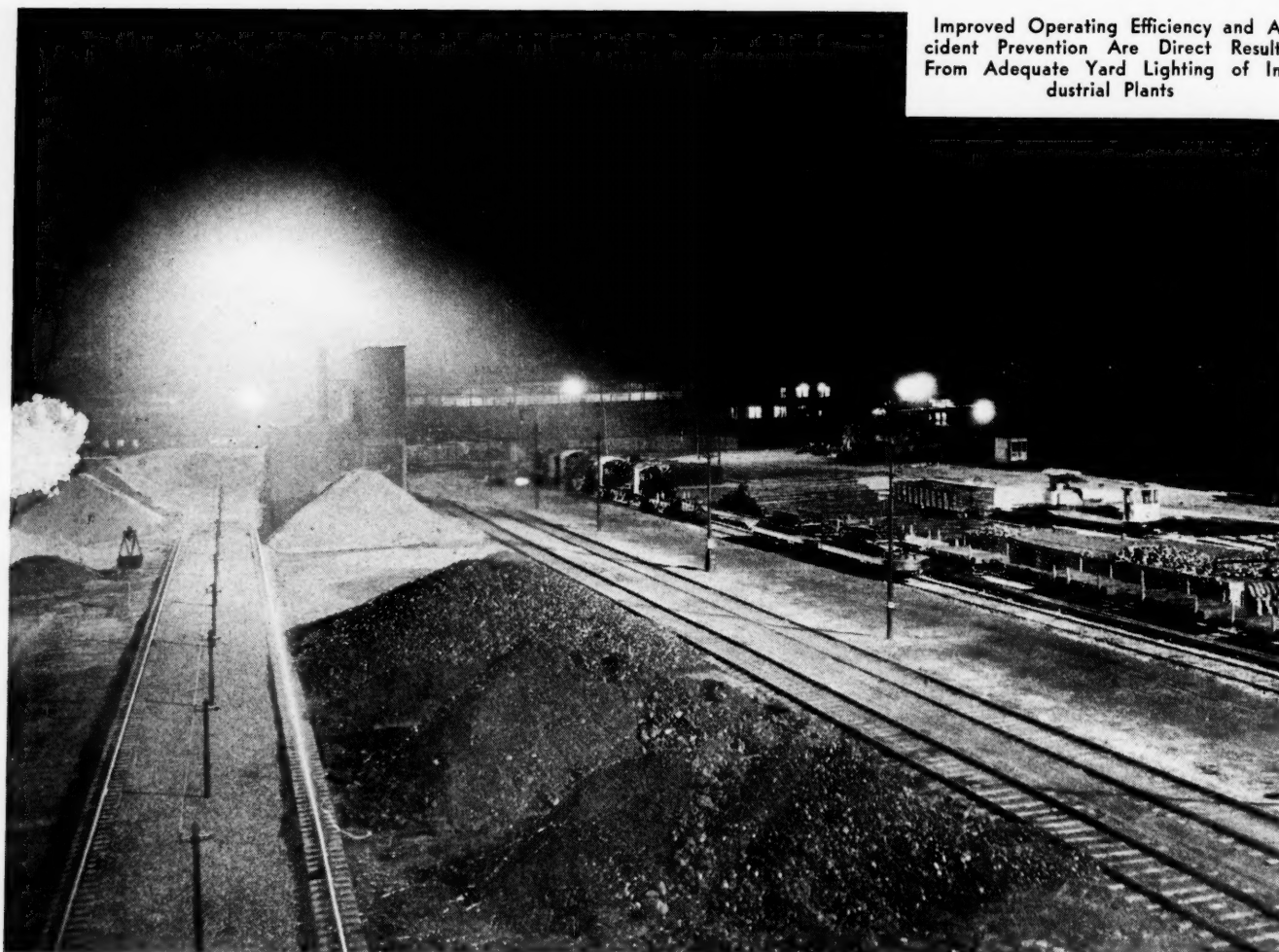
Bread department of the Ward Baking Company, St. Louis, Mo.; showing gas-fired, travelling oven, with overhead track system, by which racks of proof dough are conveyed to feed end of the oven, then baked and automatically discharged.



## World's Largest Package Ice Cream Plant

Filling room at the consolidated package goods manufacturing of the Borden Company, New York, which supplies eight subsidiary ice cream companies. Latest devices and improved methods, including fast freeze tunnels, are employed.





Improved Operating Efficiency and Accident Prevention Are Direct Results From Adequate Yard Lighting of Industrial Plants

## \* EXTERIOR LIGHTING OF MODERN INDUSTRIAL PLANTS

By

**H. E. Mahan**

Illuminating Engineering Laboratory,  
General Electric Company

**E**CONOMIC advantages of adequately lighted manufacturing space have been proved to the satisfaction of industrial executives and modern lighting facilities are regarded as an essential feature of the modern plant. These same advantages obtain for properly lighted industrial yards and grounds. The increased facility with which a workman may perform his duties, the reduction in the accident hazard, the psychological effect on the work-

men of cheerful and comfortable surroundings, and the greater efficacy in policing are all factors of real tangible value resulting from the adequate lighting of industrial plant surroundings.

The system of yard or grounds lighting adaptable to an industrial plant obviously depends upon the arrangement of the buildings and thoroughfares and the uses made of open areas. For the purpose of considering the lighting requirements we may regard the plant surroundings as falling into three classifications: entrances, thoroughfares, and open areas.

### Entrances

The trend toward the beautification of our cities, industrial plants and even the apparatus manufactured in these plants is grounded on sound economic principles. The care and attention devoted to the buildings and grounds of an

industrial plant are an index to the character of workmanship demanded in that plant; to the pride in the quality of its product. It is apparent that extremely valuable good-will may be obtained in a subtle and dignified manner simultaneously with winning the respect and commendation of the community by giving intelligent attention to the exterior of industrial plants. Relatively few plants have capitalized on this opportunity but those that have are striking examples of the merit of the plan.

Appropriate lighting is an integral part of this movement and serves the dual purpose of utility and ornamentation. At entrances and in the grounds surrounding the administrative buildings the lighting may take the form of ornamental standards, simple but sufficiently ornate to be in keeping with the buildings and landscaping. The material and design of the standards may be suggestive of the industry with which the plant is identified or the decorative motif may follow the architecture of the



buildings. Whatever type of standards used the amount of light should be adequate to illuminate the entrance walks, roadways and grounds and to provide sufficient general illumination for the buildings and building entrances. Not the least of the benefits resulting from the satisfactory lighting of entrance walks and driveways is the facility and safety afforded pedestrians and vehicles in entering and leaving the plant during the hours of darkness.

It is frequently appropriate to supplement this general illumination by floodlighting the buildings in order to emphasize the plant still further for purposes of publicity. The floodlighting of a building is a striking and attention compelling feature and makes a lasting impression on the observer of the name of the company and its products. Novel and unique effects may be developed, particularly in the case of new buildings where the idea is conceived by the architect during the period of the development of the building plans and the necessary provisions incorporated in the structure for the execution of the plan.

#### Thoroughfares

The primary object in lighting plant thoroughfares is utilitarian and serves to facilitate the safe and rapid movement of employes and material between buildings. The compensation losses to

a manufacturer from a single employe stumbling over an object lying in a dark thoroughfare may be far greater than the yearly operating and depreciation charges against a lighting system much more extensive than is needed by the average industrial plant.

A wide range of lighting units is available for this class of service either for pendent or upright mounting from poles or brackets. The required illumination intensity is dependent upon the density of traffic and the nature of the operations. The character of the light distribution is determined by the arrangement of the roadways and the requirements readily satisfied by the variety of light reflecting and refracting accessories available.

The minimum requirements for a typical industrial roadway may be considered as demanding 300 watt units spaced approximately 150 feet apart and mounted approximately 18 feet high. Avenues having dense traffic conditions or on which manufacturing operations are carried out will require proportionally more light than the minimum suggested.

#### Open Areas

Included as open areas may be considered such operations as material, coal and ore handling, storage yards, railroad sidings, automobile parking areas, etc. In addition to these specific de-

mands for lighting, there exists the need for providing sufficient light for efficient patrol and police duty. The circumstances surrounding the operations usually found under this classification in general favor the use of floodlighting projectors. This condition obtains for the reason that it is more economical to project light over relatively great distances than to carry the electrical distribution system to the areas requiring light. The flexibility in the control of the light from floodlighting projectors is also a decided advantage in this service as the light may be concentrated over the particular area that circumstances or emergencies may demand at the moment. The lighting equipment may be located on building roofs, poles or towers convenient to the source of electrical power and favorably located with respect to the required distribution of light.

During these times of unprecedented depression the management of industrial plants is endeavoring to hold organizations intact and utilize employes in constructive work. Property is being put in order, facilities added, and operating efficiencies improved in anticipation of the time when normal demand returns. A general check up of lighting facilities and requirements is a logical item in this program and will prove a remunerative expenditure of time and money.



Properly Lighted Industrial Avenues Promote Safety

Panorama of the  
Hydrogenation Plant  
at Baton Rouge, La.

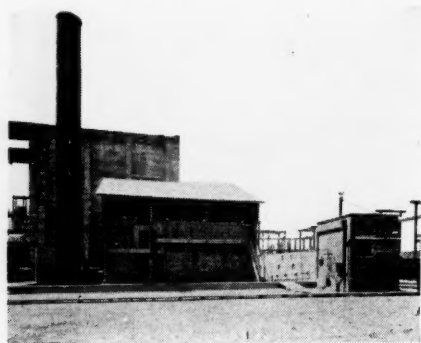


## VALUE OF RESEARCH

**T**HE hydrogenation process in oil refining, referred to previously in these columns, has been successfully developed on an extensive commercial scale at two plants, the first of their kind in the world, which have been built by the Standard Oil Development Company. One of the plants, located at Bayway, N. J., was described recently, and the other at Baton Rouge, La., illustrated here, is of similar character although incorporating further improvements in design and equipment, and using natural gas fuel to secure high temperatures necessary to the process. These plants are the direct result of several years experimental work carried on by the company and are outstanding examples of the value of research in indus-

### Stall, Fired Coil and Control House Area

Hydrogenation actually takes place in heavy steel reaction chambers enclosed in the massive concrete stalls shown in the left background, as hydrogen and oil at 3600 pounds pressure and 750 to 1000 degrees temperature are forced through the packed catalyst.



### Scope and Possibilities of Hydrogenation Which Marks Greatest Forward Step in Oil Refining—Phenomenal Success of Two Experimental Plants

trial modernization through the perfection and adoption of improved methods and equipment. It has taken a quarter of a century to develop hydrogenation to its present point of efficiency and experiments are still continuing on it. Probably more research has been devoted to this method than to any other process the petroleum industry has known.

After two years of large scale commercial operation, it has been found that the effects of the hydrogenation method are considerably more far-reaching than was at first realized. Not only does the process greatly increase the quantity and number of refined products formerly obtainable from a barrel of crude oil but an improved quality of petroleum products and new by-products are being made.

The new motor oil, Essolube, for lubricating modern high compression engines is a product of the hydrogenation process.

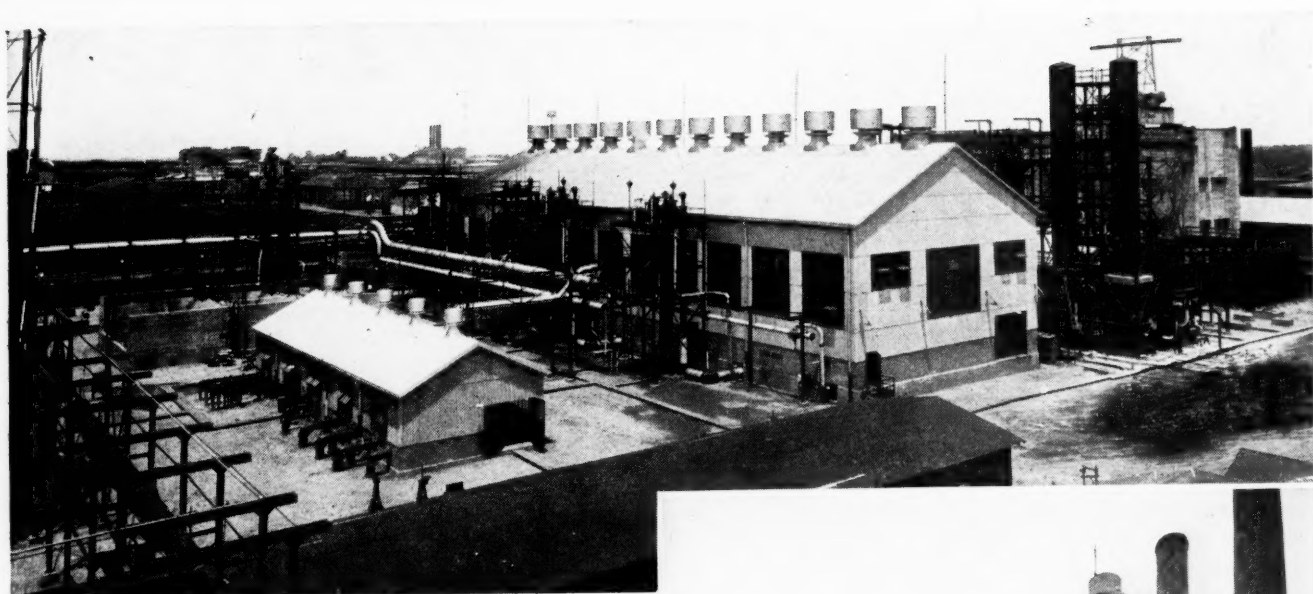
There has been developed and will soon be placed on the market a line of hydrogenated solvents for use in the paint, varnish, lacquer, soap, rubber, artificial leather and textile industries. An important trend in the field of protective coatings is the introduction and growing importance of various finishes based on synthetic resins. Requirements for this type of coatings are toughness, elasticity, resistance to weathering, ease of application and resistance to oil, gasoline, and alcohol.

High-grade fuel for aircraft and motor boats has been developed and is now being sold, and a special aviation oil is being tested. A substitute for benzol for anti-knock blending purposes is another product which can be made. A high-grade kerosene has been produced. Extension of the list of products which might be made by hydrogenation depends not on the limitations of the process, so much as on the market demand.

The first possibility of the hydrogenation process to attract attention was the conversion of coal and other carbonaceous materials into petroleum. Should our oil supply become inadequate to meet demand, authorities declare that the hydrogenation method is available when the necessity arises, to take the country's supply of coal, lignite, and the almost unlimited reserves of shale and convert them into petroleum and its products.

Furthermore, in case of war it is said that either of the two plants could be converted to the manufacture of ammonia, nitric acid and explosives.

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Low Pressure Pump House Compressor  
Building and High Pressure End of Plant

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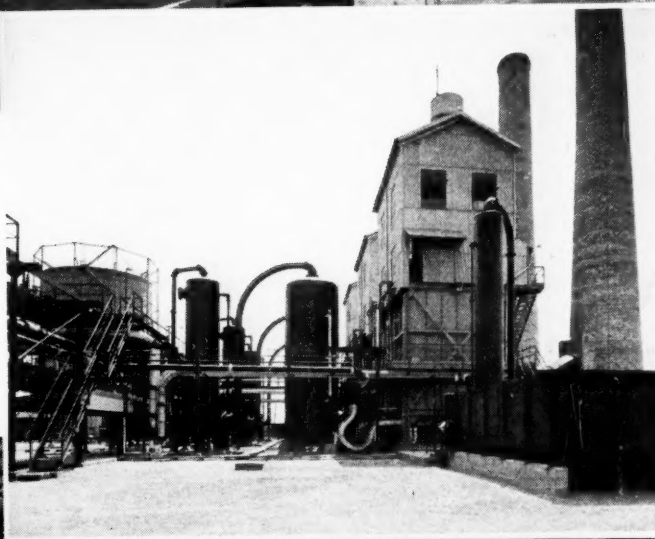
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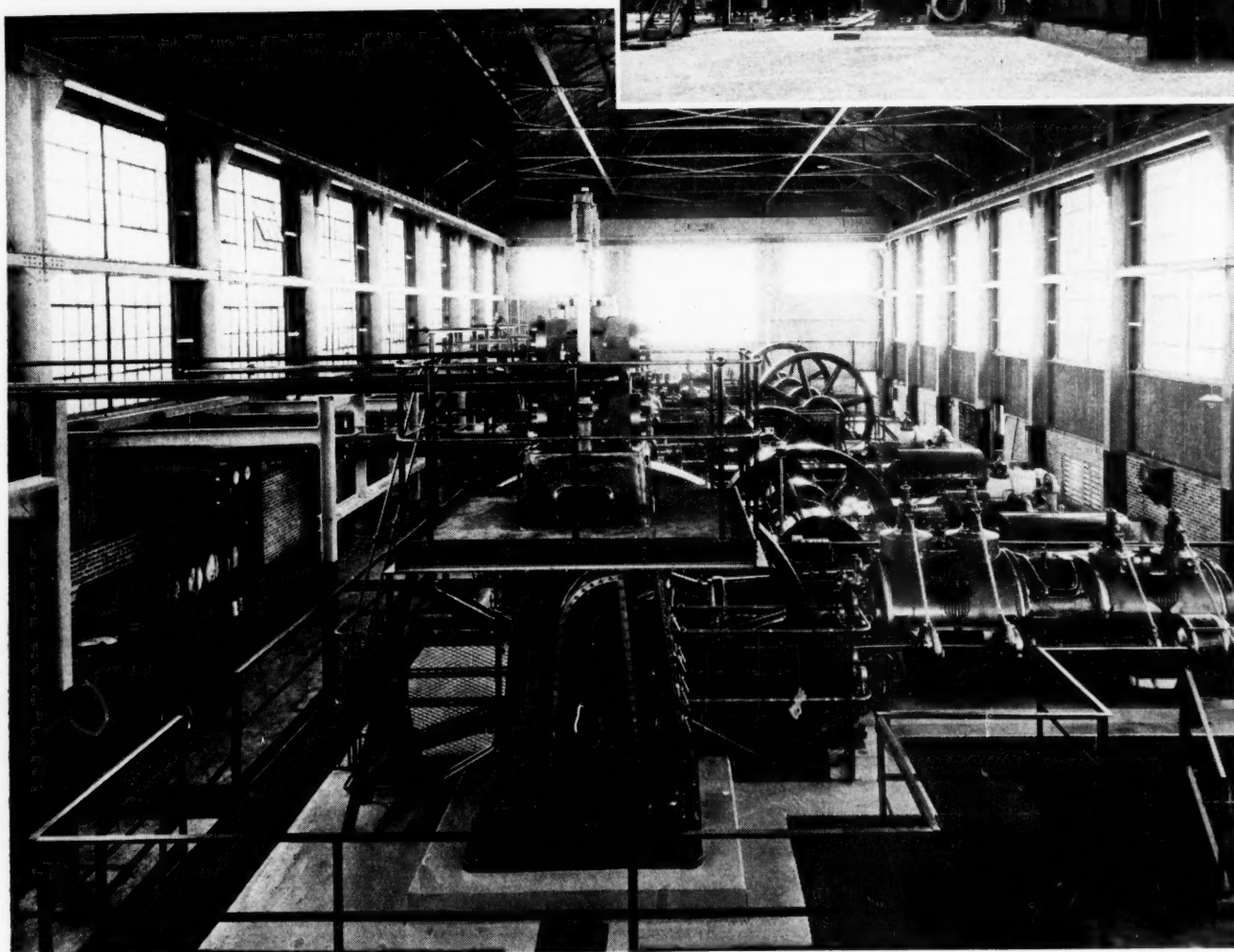
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Hydrogen Manu-  
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Interior of Compressor Building Show-  
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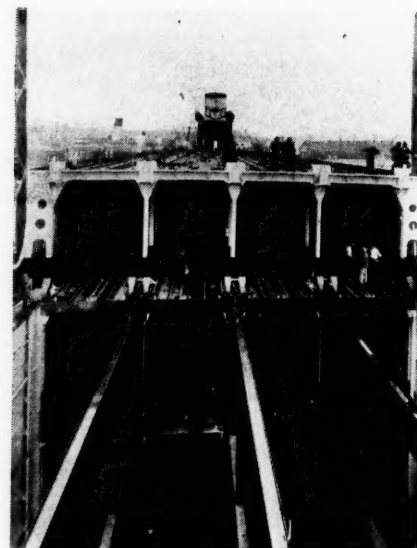
# SEATRAINS

Now Link  
New York,  
Havana and  
New Orleans

A MILE long train of loaded freight cars is carried out to sea on rails aboard specially constructed vessels of Seatrain Lines, Inc., New York City. The first vessel of this type, known as the S. S. "Seatrain," sailed from New Orleans for Havana, Cuba, in January, 1929. Two new vessels, designated Seatrain New York and Seatrain Havana, were placed in service last month after having developed average speeds on several measured runs of 17.1 knots and making on at least one run 18.75 knots. The vessels were built by the Sun Shipbuilding & Dry Dock Company at Chester, Pa., being designed for speed of 16.5 knots.

One of the two new vessels will sail from New York every Thursday touching Havana on the morning of the fourth day, leaving Havana the same evening and arriving at New Orleans the morning of the sixth day. They will reverse the same schedules from New Orleans.

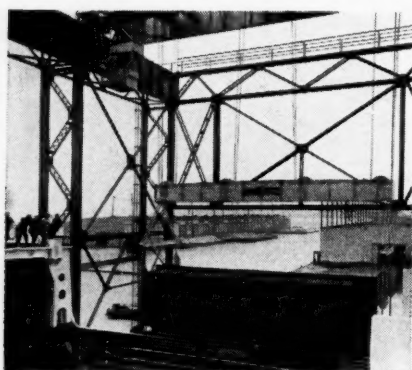
The first "seatrain," which has been in uninterrupted service between New Orleans and Havana since its initial trip, measures 440 feet overall, has a beam of 62 feet and a molded depth of 37½ feet, and a capacity of 95 cars. Engines developing 3500 horsepower provide a speed of 13 knots. The two new vessels have a length overall of 475 feet, a beam of 63½ feet, and a molded depth of 38 feet, with space on four decks for 100 cars. Engines developing 8800 horsepower insure a minimum speed of 16.5 knots. In appearance and layout the new vessels are similar to the first "seatrain."



Loading Section of Newest Seatrain

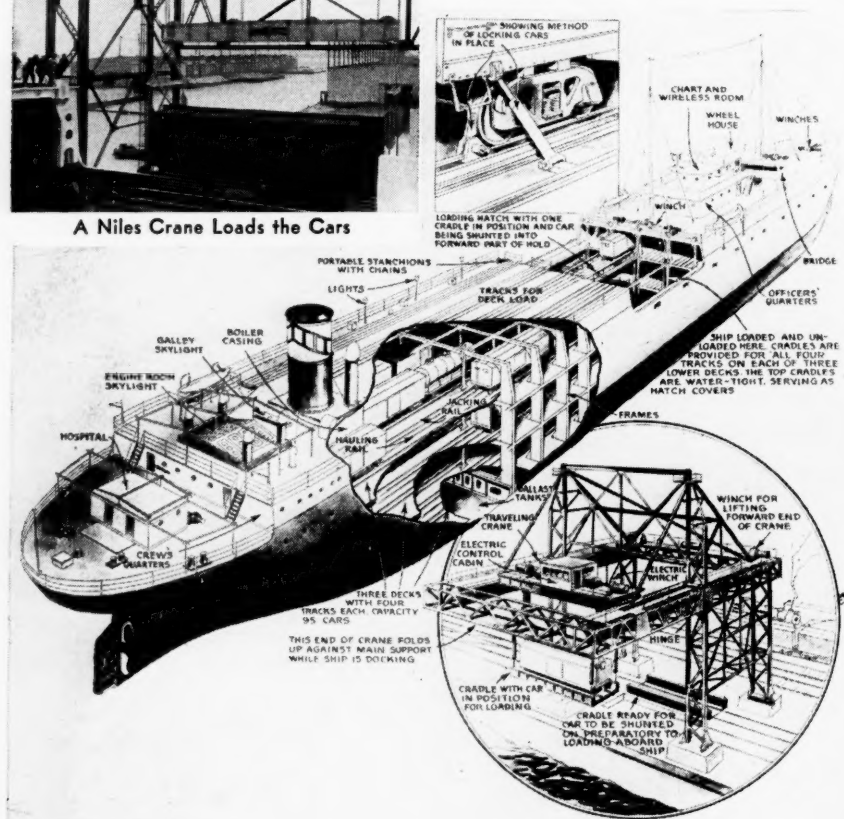
These ocean carriers are virtually floating bridges, connecting railroads in this country with over 2600 miles of Cuban trackage. The ships are loaded and discharged by means of elevators located at each terminal. A switch engine spots a car on the tracks of a big, movable steel cradle. Then a 125-ton crane, which bridges both the ship and railroad siding, hoists the cradle bearing the car, above the ship, and moves it over the hatch and lowers away. The load descends into one of four sets of guides forming hatchways which hold the cradle in position exactly in the manner of a platform in an elevator shaft. When the desired deck is reached, the cradle is stopped so that its rails register with the rails on the ship's deck, and the car is then drawn off the cradle and on to the deck rails by a car-puller. In unloading a vessel, the operations are reversed. Cars are handled at the rate of 20 an hour, making it possible to load and unload a complete cargo in a period of about ten hours.

The New Orleans terminal is at Belle Chasse, on the west bank of the Mississippi River within the customs and switching limits of the Port of New Orleans. It is on the line of the New Orleans & Lower Coast Railway, which performs all switching to and from the city, and the many important rail lines serving the port. At New York the terminal is just above Fourteenth Street, Hoboken, which is on the Hoboken Shore Railroad. At Havana the terminal is in the heart of the harbor at Hacendados. Cars destined for the city are switched by the United Railroads of Havana either to private switches of the consignees, to team tracks or to bonded warehouses. Cars for the interior of Cuba are cleared through the Havana customs, or dispatched in bond to destination.



A Niles Crane Loads the Cars

Details of Ship Construction and Loading System



# ADEQUATE LIGHTING INCREASES EFFICIENCY AND REDUCES COST

By

J. J. McLaughlin

Westinghouse Lamp Company

**I**NDUSTRIAL modernization and change of departments from one location to another in rearrangement of operating space often introduce a problem of lighting which involves the question of wiring and voltage.

The South Philadelphia Works of the Westinghouse Electric & Manufacturing Company found it necessary to move its engineering department into an area formerly used for storage purposes. The lighting for engineering and drafting, being much more than that required in stock handling, introduced an additional lighting and current demand on the existing wiring. The result was an overloading of circuits and feeders, causing low voltage at the sockets which in turn brought about low utilization of wattage consumed. All this meant a loss of light. In addition to the overload placed on the existing inadequate wiring, the incorrect type of lighting fixture produced non-uniform illumination and unworkable low intensities in certain sections of the room.

In revising the old installation the problems requiring solution were (1) low voltage at the socket due to inadequate wiring; (2) low illumination due to burning lamps undervoltage; (3) non-uniform illumination (with low average intensity) due to irregular spacings and low mounting heights; and (4) high class engineers and draftsmen working with inefficient light, causing more effort than necessary, needless delays, and possible errors.

## Enclosing Globe Fixtures Used

In the new installation enclosing globe units of good diffusing glass were mounted on even spacings and at a height from the floor which resulted in a calibre of lighting more adapted to the kind of work performed. Normal voltage was obtained at the sockets by the installation of adequate wiring. Conduits were run around the room at some distance below the skylights, so that they served as supports for the fixtures. A 100 per cent light output of the lamps

then became possible, and the unit cost of light was balanced.

In addition to the improvement of light distribution resulting from the use of enclosing globe units, the spacing of the light sources relative to the location of the drafting boards aided in the best direction of light. In the new system the lamp sizes in watts were increased only one-half to two times yet the average illumination in the working plane (desk tops) was increased by three times.

## False Economy to Burn Lamps Undervoltage

Maintenance of a constant voltage depends largely on adequate wiring. Under the rules and regulations of the National Wiring Code (a Fire Insurance provision) and perhaps under local supplementary regulations, the size of wiring in all types of structures follow specifications which consider primarily the possible fire hazard. Yet with *safe* wiring there may be a great voltage drop as a result of *inadequate* wiring or as a result of a difference between socket and lamp voltage, either of which brings about a loss of light.

When Mazda incandescent lamps are burned undervoltage, sometimes done intentionally in the belief that it lowers operating costs, the cost of light production usually increases, though light itself decreases. When lamps are operated more and more undervoltage, light production decreases much faster than operating cost, which only brings about an increase in the unit cost of light. Therefore, trying to cut down on operating

cost by lowering alone the lamp cost through undervoltage burning is false economy.

The cost of operating any lighting installation includes (1) lamp renewals; (2) cost of current; and (3) interest, taxes, and depreciation. If the sum of these three factors (in dollars) is divided by the total units of light produced (in foot-candles or lumens), the result will be the cost per unit of light.

When voltage at the socket is maintained exactly at the rated voltage of the lamp, the user normally gets the most for his money. But just as soon as the socket voltage begins to drop the cost per unit of light begins to increase in larger amounts, even though the life of the lamp increases and results in less frequent renewals. For example:

Average socket voltage in per cent of lamp voltage	Unit cost of Light in per cent relative to cost at rated voltage
Per Cent	Per Cent
100 .....	100
95 .....	107
90 .....	117
85 .....	134
80 .....	156

The drop in voltage of a mere 5 per cent results in a 7 per cent increase in lighting cost. A 20 per cent voltage drop adds 56 per cent to the unit cost. Thus to make ends meet in cost of lighting operation, the user should maintain a constant and proper voltage at the socket, not at the distribution panel or service entrance. Voltage checks should be made regularly at the sockets.

New Lighting Equipment Showing Units Symmetrically Spaced in Line With Drafting Tables, Giving the Proper Direction of Light With Good Distribution Over the Entire Room





# SPREADING AVAILABLE WORK TO RESTORE PURCHASING POWER

By

**P. W. Litchfield**

President, The Goodyear Tire & Rubber Co.

**U**NEMPLOYMENT breeds more unemployment because an integral part of unemployment is diminished purchasing power. Likewise purchasing power regulates production and production regulates employment. With something in excess of 10,000,000 workers in the United States now idle, a great section of our potential market for manufactured goods is wiped out. In an effort to improve this situation many plans for spreading available work to the largest number of workers have been tried.

The devastating consequences of widespread idleness permeate the very foundations of our business, social and political structures. Hence, those of us who have adopted the six hour day in our factories and the five day week in our general offices are not preaching the doctrine of shorter working periods so much on the basis of operating economy and efficiency as upon the broader base of emergency unemployment relief.

At Goodyear, where we have had the six hour day in effect in our factories for two years, we have not been able to make much of a case on the grounds of higher efficiency. It is our judgment that efficiency has been increased upwards of eight per cent but low production schedules preclude accurate comparisons. Of one thing we are convinced, however. It is that the shorter working day has not noticeably increased our overhead costs—that is, the cost of personnel and product supervision.

## Rotating Employees First Experiment

We first began giving serious consideration to the emergency problem of unemployment in July, 1930. Our original experiment, after there had been a considerable number of layoffs, consisted of rotating employees. As time passed and production diminished the rotation plan was enlarged until our employees were working only 24 hours each week. This plan actually avoided large scale layoffs but it was unsatisfactory in that it was difficult to administer, uneconomical and

gave room for employee complaints in the allotment of work.

We went to the six hour day in October, 1930. Since that time, in our Akron factories alone, we have been able to give employment to 3000 workers who otherwise would have been entirely without incomes.

On October 1 this year we placed the general office employees on a five day week. This move has so far enabled us to avoid layoffs which otherwise would have been inevitable and in our accounting department we added a considerable number of men and women.

## Cooperation of Workers Necessary

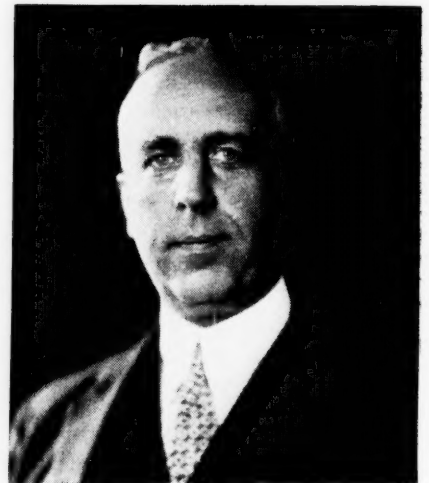
This thing of reducing hours in periods of emergency costs the individual in reduced income. Such a result is inescapable because competitive conditions and other factors make it impossible for us to increase our costs through paying a higher base rate to compensate for shorter working periods. Employer and employee must recognize the inexorable force of the law of supply and demand. It applies to jobs just as it applies to commodities and manufactured goods. When there is a surplus of labor or a surplus of goods, the bid price is down. By reducing the labor surplus, through shortening hours and other methods, there is room to hope for an improvement in labor values or pay rates.

It is essential also that the employee recognizes the fact that there is a distinct famine in jobs. As a nation we would spring to the relief of victims of food famine even though it entailed personal sacrifices. So must we now go to the relief of the jobless.

Our employees and executives, from top to bottom, have accepted the policy in good grace because they are convinced of its justice and because they recognize that they must make certain individual sacrifices in order to avert serious social consequences.

A highly important factor in Goodyear's planning has been the desirability of holding together our organization during this period of low production so that when times improve we will be in position to go ahead smoothly and efficiently. By spreading available work we have been able to retain the services of many workers whose training and skill are of tangible value to the company.

We are in a period of crisis. True, we are working out of it. The gold standard of the American dollar seems



P. W. Litchfield

safe and, with rising commodity and stock prices, we have been lifted out of the depths of mental despair.

## Cooperation of Management to Restore Purchasing Power

The present big job is to restore purchasing power to the masses.

If American business will undertake an immediate rationing of employment, millions of men and women, now idle, will be given work and, through work, purchasing power. The advantage of having 100 per cent of the employees working 80 per cent of the time over having 80 per cent working full time should be apparent to all. It is true that the incomes of the 80 per cent are somewhat reduced but the additional 20 per cent are placed in the market for commodities rather than being left completely out of the economic picture.

Technical improvements and scientific cooperation between capital and labor have progressed to a point where the normal needs of our present population can be taken care of as well in 36 hours work a week in the near future, without lowering the standard of living, as was possible in the 45 hour week of the recent past. We should work toward shortening the average working time to the point where there will be work for all. Competition makes it impossible for most employers to act independently to this end, but their earnest cooperation toward this is both desirable and necessary for the good of all.

Idleness is a social disease. The natural state of mankind is to be working in cooperation with others in producing, transporting and exchanging his products; raising the standards of living and promoting the general welfare.



# CONSERVATION OF CRUDE OIL RESOURCES

By

C. B. Ames

Vice-President, The Texas Company

THE increasing importance of the Southern States as producers of crude oil is illustrated by the following comparative statistics of production:

States	1910 Barrels	1931 Barrels
Texas .....	8,899,000	331,544,000
Oklahoma ...	52,029,000	180,809,000
Louisiana ..	6,841,000	21,842,000
Arkansas ....	0	14,835,000
Kentucky ...	469,000	6,400,000
Total .....	68,238,000	555,430,000
U. S. Total	209,557,000	850,275,000

The value of the oil produced by these five states does not differ much from the value, in all of the United States, of this year's cotton crop or the value of this year's wheat crop. There is, however an important difference. The oil can only be taken once. Every barrel produced is subtracted from the total supply and cannot be replaced, while the cotton and the wheat are annually recurring crops and do not represent an exhaustion of the supply.

The known petroleum deposits in the United States are sufficient to last for ten or fifteen years. New discoveries will, of course, be made, but the extent of them is unknown. Our 26,000,000 motor vehicles are all dependent on a supply of gasoline and lubricating oils. Our Navy must have fuel oil. Our national defense is largely based on aircraft. The commercial use of airplanes is multiplying rapidly. All aircraft must have gasoline and lubricating oils, and this supply must continue indefinitely. These facts illustrate the importance of and necessity for conserving our petroleum resources and a fair price is an essential factor in the conservation movement.

In the production of crude oil, the United States are an economic unit. The states are separated by artificial boundaries and the statutes of the States operate only within these boundaries, but economic laws know no State boundaries and they operate inexorably over the entire country and generally over the entire world. A few illustrations demonstrate this to be true.

About 30 years ago the Spindle Top pool was found in Texas. It was produced without reference to demand and without conservation. The result was a

price of about 3c a barrel. Between 1919 and 1921 Mexico increased its production from 63,828,000 barrels to 193,398,000 barrels, and during this period the price of crude in the United States declined from \$3.50 to \$1.00 per barrel. In 1931 the newly discovered East Texas pool got out of control, ran its production up to 800,000 barrels per day, and the price of Mid-Continent crude dropped from \$1.29 to 10c per barrel. Similar illustrations might be multiplied but the effect has always been an enormous waste of an irreplaceable and necessary commodity.

The gravity of the situation is fully recognized by the Federal Government, the principal oil-producing states, and the industry. The Government, through the Federal Oil Conservation Board, for eight years has been actively undertaking to prevent wasteful production, but is without constitutional power to act except on the public lands. The principal oil-producing states have enacted legislation on the subject and the statutes of Oklahoma and Kansas not only prohibit physical waste but economic waste. The statutes of Texas and California prohibit physical waste but do not prohibit economic waste. Physical waste is quite generally prohibited in the oil-producing states but economic waste is of equal importance, because the overproduction which results in economic waste is always accompanied by physical waste.

In addition to the Federal Oil Conservation Board there is an Oil States Advisory Committee appointed by the Governors of the 10 principal oil-producing states. These two boards have been giving the subject active and intelligent attention for some time and the specific program on which they are now engaged is an effort to coordinate State and Federal laws and regulations by an interstate compact between the principal oil-producing states, to which the assent of Congress will be necessary. At present, of course, each State can act only within its boundaries and effective efforts of one State to control its own production are rendered futile by the failure of another State to do so. If the oil resources of the United States are to be adequately

conserved, it must be by national policy which can only be effected by legal cooperation between the oil-producing states. Under the Constitution of the United States, the states themselves are prohibited from making treaties or agreements with each other without the consent of Congress, and hence the movement for an interstate compact to which Congress will give its consent. Unfortunately, every producer wishes to produce as much of his oil as possible, every oil pool wishes to produce as much as possible, and every state wishes to produce as much as possible. It is obvious that no state can determine by itself alone what its fair share of the total production should be without having a complete overall picture of the situation. No state is willing for some other state to decide for it on this vital question and this, if results are to be accomplished, makes it necessary to permit legal cooperation between the states in order that they may determine jointly with the cooperation of Federal authorities what the total production of the United States should be and how much of this production should be allocated to each state. One of the principal accomplishments under an interstate compact would be the determination of this overall picture and this allocation. When this is done each State must strengthen its own laws and, according to its own policy, control the production within its boundaries so as to conserve the national resources and at the same time, conserve its own.

Texas, California and Oklahoma could each produce enough crude oil today to supply the entire requirements of the world. Obviously if each one of them or any one of them insisted on doing this, the entire industry of the United States would be destroyed, and the oil which should be very carefully conserved would be wasted. It is so obvious that there should be intelligent cooperation between the producing states and that this cooperation can only be legally provided for by an interstate compact it is inconceivable that objection should be raised.

Some of the other Southern States are likely at any time to discover valuable oil and gas deposits. Where this is probable, as in Mississippi, immediate steps should be taken to enact laws which are adequate to properly control the situation. The terrible experiences through which other states have passed and the legal experiments which have been made are sufficient guides to sound legislation. It should be enacted before it is too late.

# ST. LOUIS SOLVES DRAINAGE PROBLEM

By  
**Oscar Kahan**  
St. Louis, Mo.

**T**HE St. Louis River Des Peres drainage project is practically completed after eight years of labor and the expenditure of \$11,000,000. For four miles of its stretch through the city's western residential district and Forest Park, the ugly, unruly River Des Peres has been confined within concrete conduits, while high storm channels guard against its destructive tendencies during the last nine miles of its course through a prosperous industrial section.

Work of curbing the river began in 1924, after voters in 1923 had approved an \$87,000,000 bond issue, which included \$11,000,000 for the project.

Nineteen miles of sinuous stream have been replaced with thirteen miles of structure, including two miles of 32-foot reinforced concrete arch conduit, 10,000 feet of twin 29-foot concrete conduits, and nine miles of open storm channel with concealed foul weather sewer.

Beginning at the western city limits, the 32-foot closed construction runs to the middle of Forest Park, where large additions of lateral inflows require increased capacity, which is provided for with twin conduits, which were built to one-half mile beyond the park. The closed construction was not continued

from here because the sharp change from a residential and park district to a highly industrial section did not make such expenditure economically sound.

The open channels were constructed with sloping sides, varying from almost vertical in hard rock sections to as flat as 1 on 2 in very soft ground. Bottom widths ranged from 30 to 150 feet, while flow depths were generally 16 or 18 feet.

The backfill on the conduits will be allowed to settle for two years, and then the city plans to build a roadway—Des Peres Boulevard—over the closed construction from the western city limits through Forest Park.

Section F, the last of the conduit construction, was completed and accepted in June 1932, leaving only two short sections, one of 1200 feet in a middle section and one of 1100 feet at the outlet, to be completed.

The contract for Section A for \$442,000 was awarded to a firm who began work in March, 1924, by constructing diversion ditches. The first ditch was not as large as the original channel nor was the bottom of the ditch carried down to the flow line of the creek, so that the dam across the river bed impounded considerable depth of water. Excavations were subject to periodic flooding.

A number of difficulties and disputes arose and in November 1924, the city ordered work stopped and turned the section over to J. J. Dunnegan & Company of Shenandoah, Iowa. Constructing deep diversion ditches, the new contractors pressed excavation rapidly, delaying trimming and lining until the seepage was reduced.

The main excavation was a critical operation, but the construction of the foul water sewer involved real difficulties. Consisting of a semicircular conduit of brick or segmental block with the channel lining as the roof, the trench was below the water table and was almost continuously wet. At first the channel lining was placed on wooden forms built in the sewer, but the removal of the forms delayed progress. Finally, a plan of roofing the conduit with precast slabs was adopted and the work proceeded more rapidly.

**Turns River Des Peres Into Channel for Handling Surface Drainage and Sewage After Eight Years' Labor and Expenditure of \$11,000,000—Plans to Build Highway Over Enclosed Portion**

Section B-1, a project 1200 feet long, consisting of open channel in earth with the low level sewer, was let to the Dunnegan Company on a cost-plus agreement. The final cost of the project was \$151,000, work beginning in October, 1925, and ending in July, 1926.

Sections B-2 and C, consisting of 9000 feet of construction in rock along the existing stream, was let to W. E. Callahan & Company of St. Louis for \$1,479,000. Although subject to flood interference, the work was not seriously hampered, since there was little erosion and the deposit of mud was not appreciable.

Stripping was done with a dragline and, in general, rock was drilled and blasted over a considerable length. After a small section of the foul weather sewer had been laid, it became evident that segmental blocks were not economical, and revised plans were formulated, permitting the placing of concrete lining on the roughly excavated sides of the rock trench.

For the first 2000 feet, a diversion ditch was impossible and the contractors laid a reinforced concrete pipe, five feet in diameter, along the bottom to one side of the finished work for the dry weather flow. Other methods employed subsequently on the section included completing one-half of the channel at a time, separating the creek flow from the opposite half by a rockfill and sandbag barricade.

Section D, awarded to A. Guthrie & Company of St. Paul on a bid of \$2,296,057, included 10,000 feet of twin arch conduits and a junction chamber, said to be the largest ever constructed, where the incoming 32-foot conduit and two 16-foot sewers are converted into two 29-foot conduits.

For the first 1200 feet of the section, the right-of-way was narrow, lying between the river and the buildings of a large industrial plant, but the remaining 8800 feet was through vacant property and Forest Park, giving ample space for operations.

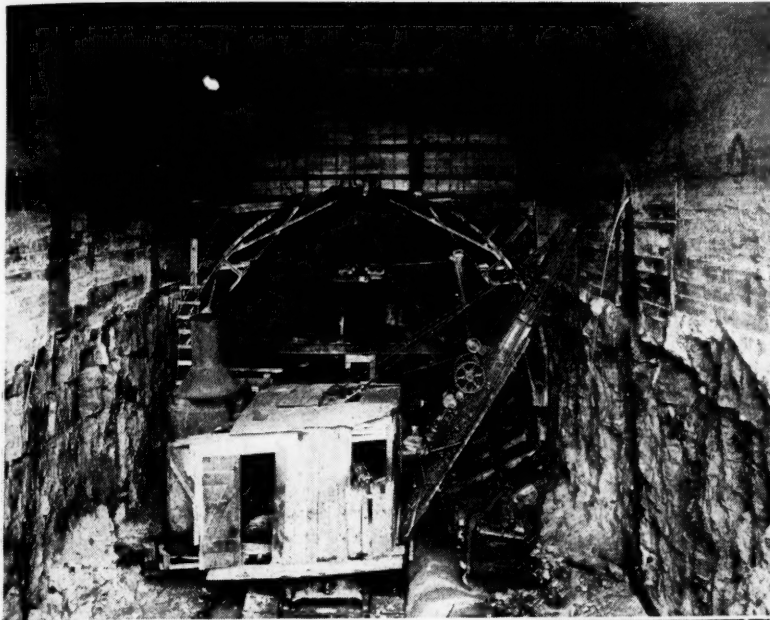
Guthrie started excavations north of the narrow right-of-way, employing a shovel with a 6-yard dipper and a 90-foot reach. A small dragline was used for rough trimming and cleaning up.

In construction of the concrete conduits, the invert and the footings were first poured. As soon as permissible, the arch forms were placed on this in-

General View of Excavating Method Shows Dam Constructed to Prevent Scour, Overhead Cableway System and Backfilling Work.

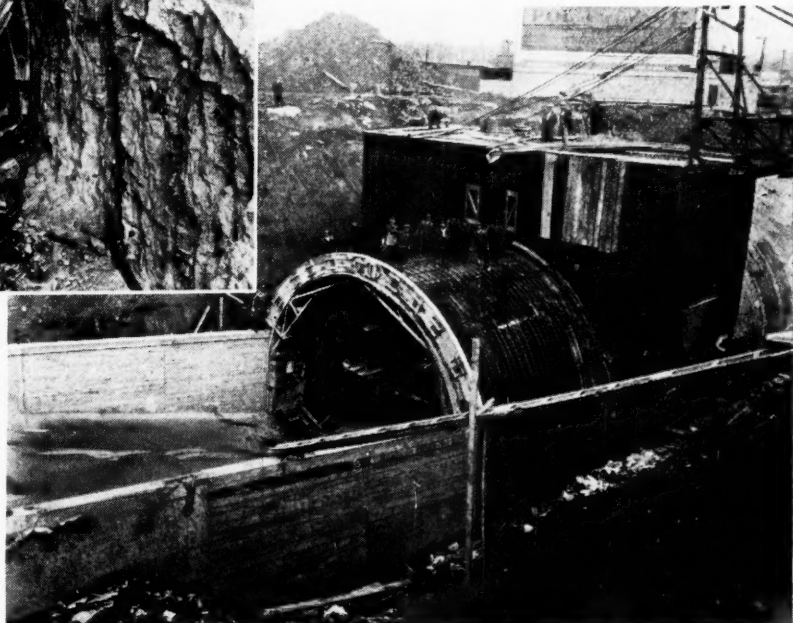






Construction of 32-Foot Arch Under Kingsbury Boulevard Culvert, With Steel Form in Place.

Partially Completed Intake Tube Shows Reinforcing Steel for Regular Arch Section and Roofed Over Gantry.



vert, the forms being moved by a carrier which was on wheels and traveled on rails.

When this form had been securely placed, the reinforcing rods were put in place. Over this the steel back forms were then pulled, carried on a gantry traveling on rails. This outer form was then secured to the inner steel forms by means of bolts. Chutes, which were carried on the same gantry as the back form, were placed, and concreting was begun.

The concrete was brought from central mixing plants in trucks or on narrow gauge railways. When trucks were used, a bridge was carried on the gantry and the trucks were dumped directly into the hopper. When the railway was used, the concrete was dumped on belt conveyors, using a crane which picked up the two-yard car bodies.

To make the operations independent of the weather, the gantry was roofed over, a highly successful innovation, and the central concrete plant which was built near the construction scene, was provided with apparatus for heating water and aggregates.

Returning to the first 1200 feet, the contractor separated the river from the new channel by a 30-foot embankment, but at one point, under a railroad bridge,

Gantry Used for Carrying Steel Back Forms and Concrete Chuting Equipment.



steel piling and a rockfill crib were used.

Before work was begun on Section E, W. W. Horner, Chief City Engineer of Sewers and Paving, conceived the plan of unwatering the soil in advance of construction to prevent a heavy run of ground water to the new low level of the channel.

A shaft, ten feet square and heavily timbered, was sunk 35 feet to a point below the top of the shale structure. From the side of the shaft, a 12-inch sewer pipe was laid out, extending up the valley about 300 feet and located just on top of the shale. The pipe was laid with open joints and was backfilled with rock and gravel to afford easy flow for the ground water to the pump well. A 2½ inch electric centrifugal pump was placed in operation, October 1928, the well being pumped out daily, the water usually rising about eight feet in the shaft over night.

The cost of the soil drying was less than \$5000 and its effectiveness in reducing the ground water levels in advance was evident to the engineers and the contractors.

Section E was awarded to the Callahan Company on a bid of \$871,232. Because of the park terrain, part of the conduit had to be constructed under lakes several of which, including one large lagoon, were emptied and then restored after construction. The contractor also graded a site for a large bowl stadium during his excavation. Plans for which will be developed later.

Section F, the last of the closed sewer construction, was built in a deep gorge through a highly developed apartment house district. It involved crossing un-

der a main line railroad, a heavily used street car system, and going through two existing arches and 280 feet of existing 32-foot sewer, all at higher levels.

At the end of the project, which was, in reality, the beginning of the system, a huge half-funnel sewer, expended by the use of head walls and retaining walls with a slope dropping 28 feet in a distance of 120 feet, was built to collect the flood waters and to concentrate them into the mouth of the sewer.

Stiers Brothers Construction Company of St. Louis secured the contract, the final cost being \$976,131. Work was hampered on a number of occasions by the rampant waters, which during one flood on September 3, 1931, swept a 10-ton steel construction carriage a distance of almost four miles. Fortunately, no damage was done to the already completed tubes. The section required 41,358 cubic yards of rock excavation, 12,633 cubic yards of fire clay and shale excavation, and 135,669 yards of earth excavation.

On Section J, which is the middle section under construction, \$598,185 have been expended for excavations, including 7800 cubic yards of rock and 1,249,800 cubic yards of earth. Rip rap paving so far totals 797,000 square feet, with 52,400 sacks of cement being used for gunite.

In addition to Mr. Horner, who was in charge of both design and construction, other city engineers to supervise the project include Harold Horan, assistant engineer of construction, Guy Brown, principal assistant engineer of design, and Ray Denison and August Greutzenmacher, resident engineers.



# SOUTHERN CONSTRUCTION CONTINUES INCREASE IN OCTOBER

A compilation of reports published in the MANUFACTURERS RECORD DAILY CONSTRUCTION BULLETIN reveals that contracts awarded for construction, building and engineering projects in the sixteen Southern States during October had a total valuation of \$55,691,000, the highest monthly total since July, 1931, when awards amounted to \$66,633,000. October awards compare with a valuation of \$47,485,000 for September, 1932, and with \$45,351,000 for October, 1931.

The new record established last month is a result of the letting in volume of a number of projects included in the total representing "projects to be awarded" which attained an unusually high level in both August and September. Awards during the tenth month of this year of so large a volume of work means that through the winter months the South will go forward with construction and engineering projects at a rate perhaps never before equaled, and that early next year, before work can be initiated on projects let to contract in the first part of 1933, a worthwhile construction program will be in the course of completion, providing work for many skilled and unskilled building tradesmen and a market for a diversity of materials and contracts for its equipment.

To November 1 the value of building, engineering and construction contracts awarded in the Southern States, covering only those projects for which cost figures were available and excluding hundreds of residential projects involving an expenditure of under \$10,000 each, is \$357,721,000. It is conservatively estimated, that the ten months total in the South involves an expenditure of close to \$475,000,000.

Industrial and engineering projects, comprising a wide variety of undertakings and including airports, filling stations, garages, canning plants, piers, power plants and enterprises of many other types, hold first place in October awards with a total of \$28,418,000. During the preceding month awards for similar projects aggregated \$17,557,000. As a result of the energy and initiative displayed by various governmental branches, contracts were let during last month for an unprecedented amount of

dredging work in harbors and in bodies of water which make up our inland waterways, for the building of many miles of levees, and dikes, and revetments and contraction works generally, as well as for navigation locks and essential operating machinery. Public projects of this character numbering 41, placed under contract in October, were valued in all at \$24,749,000. Awards for industrial enterprises, numbering 40, call for the expenditure of \$1,493,000, and provide for the building of textile mills, paint factories, a sulphur plant, canning and packing units, foundries, oil refineries, power plants and substations, ice plants, a casket factory, a garbage reduction plant, a tobacco factory and a peanut shelling unit. The largest award of this class was for a \$200,000 oil refinery, most of the awards approximating \$25,000. This clearly indicates that while major industrial expansion operations are lagging, that numerous small plants are going forward with the erection of additions or new units and the installation of new equipment. The industrial classification also included six warehouses to cost \$225,000 and 14 garages and filling stations involving an expenditure of \$303,000.

The most outstanding program under way in the South, outside of general Federal building work, involving the erection of post offices, courthouses and other governmental structures, is the \$325,000,000 Mississippi River flood control project. Awards in connection with this were primarily responsible for the new high record in October. This work is attracting contractors and engineers from all parts of the country, resulting in the development of material handling methods never before utilized and the use of standard machines, such as tractors, power shovels, industrial railway outfits, tower machines, and draglines, as well as specially constructed contractors' plants. Another project of like nature is the \$9,000,000 program for curbing the ravages of Lake Okeechobee, Florida. Construction is going forward also on locks, dams and operating equipment on links of the inland waterway system along the Atlantic and Gulf coasts and the Mississippi River and its tributaries.

Road, paving and bridge construction last month totaled \$16,570,000, compared with \$18,713,000 for similar work in September. This class of construction has figured prominently in the South during

**Awards Total \$55,691,000—Highest Since July, 1931. Industrial Construction Features in Proposed Work. \$475,000,000 Value of All Contracts for 10 Months**

1932. Many important bridge projects are scheduled to be placed under contract shortly in the sixteen Southern states from Maryland to Texas.

Awards for city, county, and other government building work in October totaled \$5,831,000, compared with \$3,181,000 for September. The largest contract is the \$1,200,000 courthouse for Jacksonville, Fla. An ambitious housing program has been initiated at Army Training Cantonnments, flying fields and schools and other training centers.

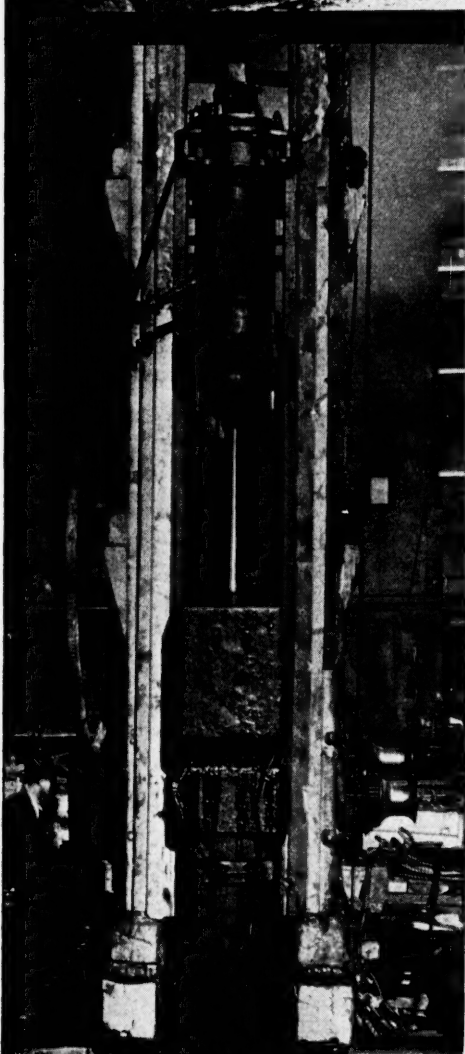
School building awards last month called for an expenditure of \$2,239,000, an impressive showing, even when compared to the preceding month when awards for similar buildings totaled \$3,266,000.

Contracts awarded for individual dwellings costing \$10,000 each and up, amounted to \$884,000, indicating that this class of construction is still lagging. Residential work is not being undertaken in anywhere near normal volume, although there is encouragement in the fact that an impressive volume of work of this character is accumulating which will undoubtedly be let to contract with continued business improvement.

## CONSTRUCTION ACTIVITY FOR OCTOBER, 1932

	Contracts Awarded	Contracts to be Awarded
<b>General Building</b>		
Apartment houses and hotels .....	\$306,000	\$1,130,000
Association and fraternal .....	56,000	80,000
Bank and office .....	25,000	185,009
Church .....	66,000	776,000
Dwellings .....	884,000	598,000
Stores .....	487,000	160,000
<b>Total .....</b>	<b>\$1,824,000</b>	<b>\$2,929,000</b>
<b>Public Buildings</b>		
City, County, Government and State .....	\$5,831,000	\$13,256,000
School .....	2,239,000	1,504,000
<b>Total .....</b>	<b>\$8,070,000</b>	<b>\$14,760,000</b>
<b>Roads, Paving and Streets</b>		
.....	\$16,570,000	\$39,861,000
<b>Industrial and Engineering Projects</b>		
Dredging .....	\$5,727,000	3,100,000
Filling stations, garages, etc. ....	303,000	275,000
Industrial plants ..	1,493,000	10,630,000
Levees, revetments, dikes, etc. ....	19,022,000	4,227,000
Miscellaneous .....	1,873,000	3,109,000
Sewers, drainage and water works .....	809,000	4,209,000
<b>Total .....</b>	<b>\$29,227,000</b>	<b>\$25,550,000</b>
<b>Grand Total .....</b>	<b>\$55,691,000</b>	<b>\$83,100,000</b>

# THE RIGHT PIPE *for* PILING



**M**odern steel-pipe piling, used instead of open piers, yields important economies. The pipe is driven, open-end, to solid bottom, then cleared and filled with concrete. Time is saved in the actual work of installation. Less under-pinning of adjacent buildings is required. Loss of ground below excavation level is reduced to a minimum. Vibration in driving is less than with other methods. Pipe piles can be driven tangent to neighboring walls.

Altogether, the efficiency of this plan is so marked that it is rapidly gaining favor. Over a million feet of large-dimension steel pipe has been placed under large buildings in New York City alone. The unusual strength, uniformity, and durability of NATIONAL Pipe commend it for such a use. Accordingly, here as elsewhere, engineers and experienced contractors prefer it. Correspondence is invited concerning the economical use of—

*America's Preferred Pipe for Piling*

NATIONAL TUBE COMPANY · PITTSBURGH, PA.

Subsidiary of United  States Steel Corporation

# NATIONAL PIPE

NOVEMBER NINETEEN THIRTY-TWO

39



## \$10,000,000 POST OFFICE DEPARTMENT BUILDING

The new \$10,000,000 building in Washington for the United States Post Office Department will be a major unit in the extensive development of the so-called Triangle Area. It will occupy a distinctive position within this area in which are located structures for a number of the Government's executive departments and independent establishments. The northerly facade will front on Pennsylvania Avenue with the easterly and westerly facades extending from 12th to 14th streets forming a segment of the Circular Plaza and the south end of the wings surrounding one of its two large interior courts merging with a building for another Government department which will extend to B street. Vehicular entrance, on both facades, to the interior courts is through wide driveways, while ramps will give access to the basement level for service purposes. Floors will be finished with terrazzo, marble or tile in public portions and cements, compositions, cork and hardwood in working, private and service portions. Interior walls in public portions will be finished in marble, stone, tile and plaster, and the roof finish, except for the Mansard portion, will be of Italian type tile. Offices of the Postmaster General and Assistant Postmaster Generals will be paneled in wood.

In conformity with other buildings comprising the general group, the Post Office Department building will be seven stories and basement, with a ground area of approximately 108,000 square feet and cubic content of about 14,000,000 cubic feet. It will be of steel frame construction with limestone exterior on a granite base. There will also be granite steps, platforms and curbing. Steel

or hollow metal will be used for exterior windows, frames and sash and interior doors and trim.

Facing the Great Court, the curved portion of the facade will consist of a 2-story base supporting a 3-story colonnade surmounted by a cornice and sculptural attic treatment two stories in height. The colonnade of the large curve or niche terminates in colonnaded pavilions with pediments arranged for symbolic sculptural groups. Facing Circular Plaza on 12th street, the facade will harmonize with that of the building for the Internal Revenue Department facing the opposite side of this plaza. Architectural treatment of this facade affords a variation from the facade facing the Great Court in the development of a central pediment motive containing the main entrance to the building from this street with an arcaded covered promenade which follows the circular front between two pavilions. The attic story on this front is developed as an architectural feature and enclosed in a roof of Mansard type with pedimented

and circular head dormer windows and copper and slate finish.

The structure will be equipped with 16 passenger and 3 freight elevators, for which the A. B. See Elevator Company, New York City, has contract, and will be heated by steam from a central plant now under construction. A drinking water system will also be installed. Final completion of the building is scheduled for the spring of 1934.

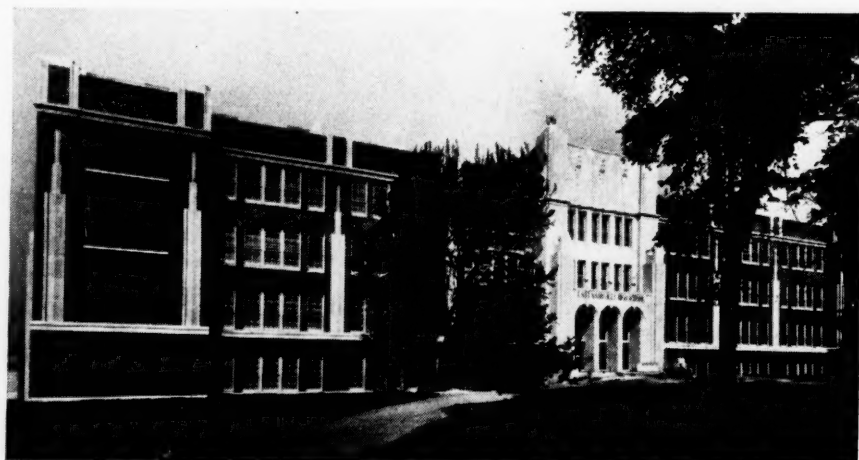
Delano & Aldrich, New York, are the architects, and McCloskey & Company, Inc., are general contractors. The Fort Pitts Bridge Works, Pittsburgh, Pa., was awarded contract for fabricating 10,000 tons of structural steel.

## \$500,000 Nashville High School

The new East Nashville High School recently completed in Nashville, Tenn., at a cost of approximately \$500,000, is unsurpassed in the entire South. Including laboratories, the building contains some 40 class rooms and offers accommodations for about 1500 students. Features of the structure are a basement cafeteria, modernly equipped with efficient and sanitary kitchen equipment; a spacious auditorium which offers something new in combining gymnasium, basketball court, stage and platform; complete medical and dental clinical rooms, teachers' rest rooms, mechanical workshop, music rooms, walled with acoustic tile, and a large band room in the tower.

The structure is 270 by 210 feet, 3 stories, of concrete and brick, with pitch and gravel roof. A central hall is floored in terrazzo blocks and lined with marble wainscoting. Special features include a complete internal and external ventilation system and a program clock system, by which the entire building is timed by one master clock with signal gongs.

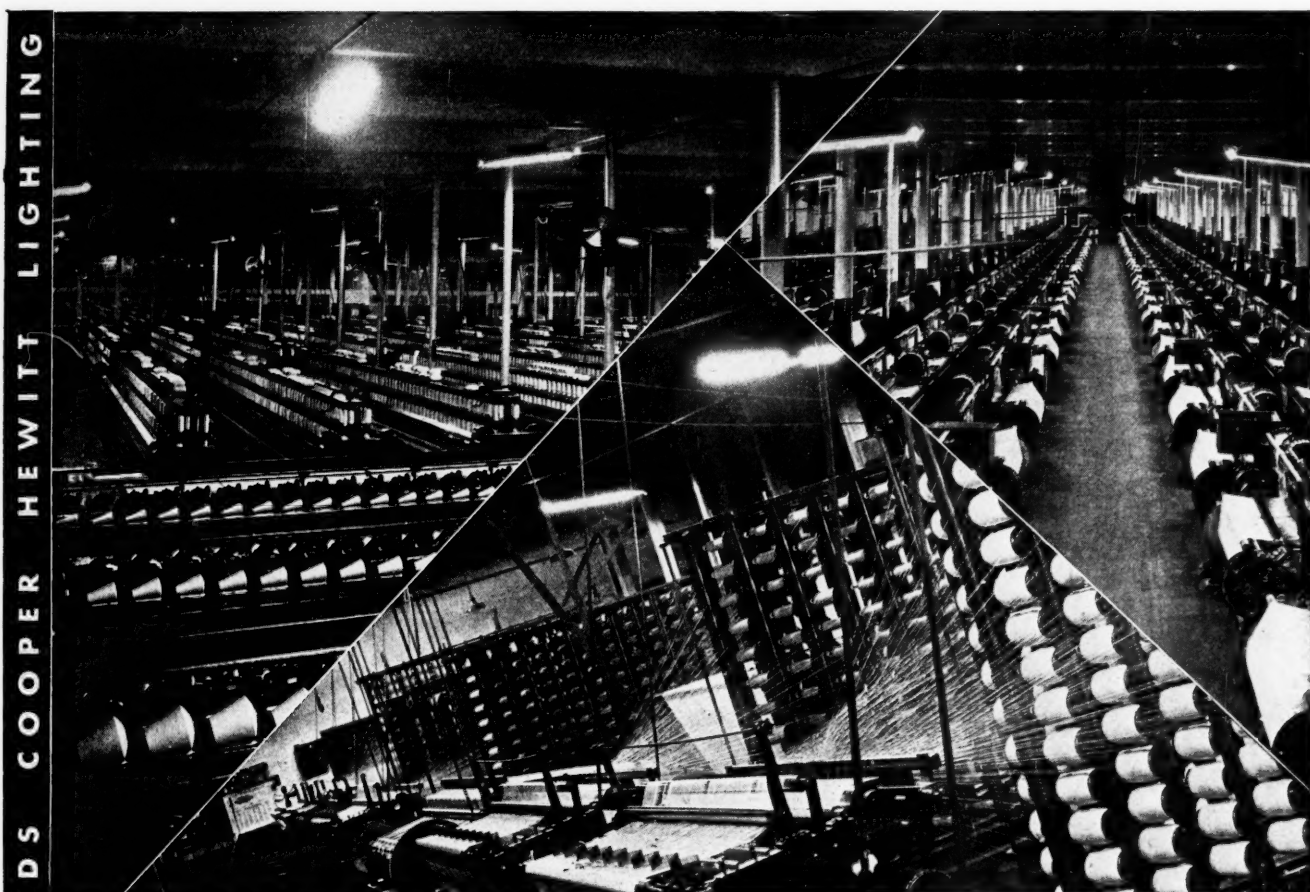
Marr & Holman, Nashville, were the architects for the building, and the V. L. Nicholson Company, Knoxville, Tenn., general contractors.



MANUFACTURERS RECORD FOR



# AN INEXPENSIVE WAY to increase output, reduce seconds and maintain quality . . .



MODERN INDUSTRY DEMANDS COOPER HEWITT LIGHTING

**P**ERFORMANCE in many leading mills has proved definitely that Cooper Hewitt light is in a class by itself when it comes to textile operations. Records of accomplishment speak louder than words, especially these days—and any one of our representatives will gladly show you indisputable data which may mean the saving of many dollars in your own mill.

In the meantime remember this: an adequate installation of Cooper Hewitts in your mill will enable every operative, with normal eyesight, to see objects as if they were magnified. Weavers, loom fixers and operatives in your spinning, winding, warping and other

departments thus are given a tool which will help them to set up new standards of efficiency.

If you are responsible for the lighting of a textile mill, let us tell you how economical Cooper Hewitt illumination really is. In some mills, the complete installation pays for itself in two years. General Electric Vapor Lamp Co., 819 Adams Street, Hoboken, N. J.



BETTER THAN DAYLIGHT

GENERAL  ELECTRIC  
VAPOR LAMP COMPANY

735 Copr. 1932, General Electric Vapor Lamp Co.

## \$3,000,000 LEVEE JOB

The Trinityfarm Construction Co., Dallas, Texas, is pushing work on the Courtableau-Henderson guide levee, involving the placing of 7,460,000 cubic yards of material over a stretch twenty miles long and 1,029,000 yards on the east guide levee from Ramah to Gravel River. The project is a part of the Atchafalaya River floodway protection levee, incorporated in the original Jadwin plan, the McWilliams Dredging Co., New Orleans, La., having the contract for the section extending from the Southern Pacific Railroad line to Cataboula, La., approximately 30 miles. The McWilliams contract involves the handling of 3,155,000 cubic yards of material. The Trinityfarm Construction Co. in August received the contract for a section of spillway levee from just east of Palmetto on the Jefferson highway, to Bayou Courtableau Station 444+00. The levee in this section is 8.4 miles long, the contract calling for the handling of 2,750,000 cubic yards of earth. The job is scheduled for completion in 500 days but a temporary protection levee to elevation is to be completed by Dec. 31, 1932. The total cost of the spillway levee is estimated at \$3,000,000.

An idea of the varied equipment used in jobs of this size is given in the list of machinery used by the Trinityfarm Construction Co. on the Courtableau-Henderson guide levee, below.

One 3-yard Monighan dragline, loading four 12-yard Trackson Caterpillar crawler-type wagons, handled with four type L Allis-Chalmers tractors, and one Allis-Chalmers 35 tractor with bulldozer.

Two P. & H. No. 780 draglines, equipped with 160-horsepower Fairbanks-Morse full Diesel engines, loading 14 International 2½-ton trucks.

One 12-inch Morris dredge, powered



Architect's Drawing of \$700,000 Market for New Orleans

Three modern structures are planned to take the place of the famous market of the Crescent City. Illustrated are coffee shop, fruit and vegetable market, and fish and meat market. Behind the coffee shop a large, modern farmers' market will be erected. Sam Stone, Jr. & Co., Inc. are the architects.

with General Electric motors, totaling 535 horsepower, and one 16-inch Morris dredge, equipped with General Electric motors, totaling 1100 horsepower.

Four 6-W Monighan draglines, equipped with 160-foot booms; one No. 6160 Monighan dragline, equipped with a 175-foot boom; two 3-W Monighan draglines, equipped with 90-foot booms.

The clearing and grubbing of the right-of-way for the levee construction is being handled with Fordson and International tractors and Tom Huston stump pullers and skidders.

The equipment above listed is when installed and operating expected by the contractors to handle approximately 1,200,000 cubic yards of material monthly.

### Building Spillway Levee in Louisiana Parish

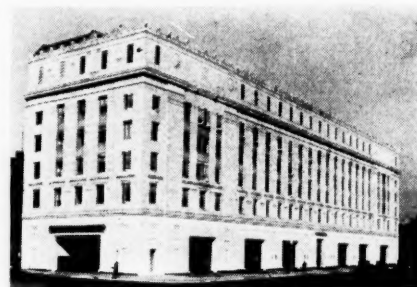
A P. & H. dragline machine is here shown loading International trucks, the equipment being employed in filling Courtableau Bayou.



## \$1,000,000 "SERVICENTER"

THE largest automobile service station in the world is housed in the \$1,000,000 Standard Oil Company of New Jersey building completed last month in Washington on Constitution Avenue, fronting on the Capitol grounds. It is the only privately owned structure on the new avenue, a broad thoroughfare extending more than two miles from the Capitol to the Potomac, and bordered on each side by Govern-

### Standard Oil Offices and Service Station in Washington



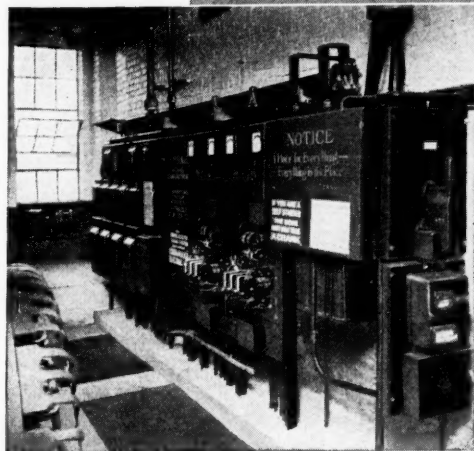
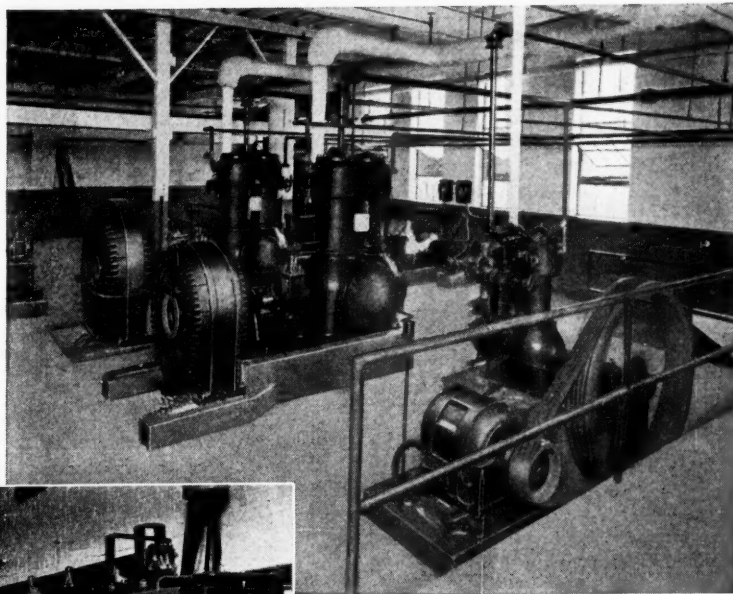
ment buildings and by extensive parking, including the Mall.

Erected in accord with the plans of the Fine Arts Commission for the beautification of the National Capital, the six-story limestone building of modernized classic design and monumental character, contains within its walls, almost unapparent to the eye of the casual passer-by, every modern device known to service station operation, from an automatic washing device to a squeak detector. It is appropriately designated the "Servicenter". Headquarters of the company and offices for rest are on the second, third, fourth and fifth floors, sixth floor being used for garage. The sub-basement is the mechanical backbone of the building, housing the oil-burning equipment, boilers, switchboards, air compressors and other equipment.

Clyde N. and Nelson Friz, Baltimore, are the architects, and James Stewart & Co., Inc., New York City, the general contractor.

# SAVED ..... \$13,993

by Modernizing  
with G-E Motors  
and Control



*Two of four G-E synchronous motors driving ammonia compressors in one of J. H. Allison & Company's plants; also G-E Type KG induction motor driving a small compressor*

*Complete switchboard equipment for J. H. Allison & Company's modernization was supplied by the General Electric Company*

J. H. Allison & Company, Chattanooga packers and ice manufacturers, checked up on the obsolete drives in their two plants. The result — both plants were completely modernized with G-E motors and control.

Four 125-hp. synchronous motors replaced former compressor drives. Four 3½-kw. motor-generator sets were installed to supply d-c. power. Complete G-E Wiring Systems were used throughout.

Mr. H. W. McCall, Vice-President says in regard to the modernization, "We are very well pleased with our change from steam to electricity, and at our No. 1 plant we show a saving of \$9740.01 over the previous year's cost. At our No. 2 plant our saving was \$4253.40."

The G-E motor and control installation in the plants of J. H. Allison & Company again emphasize General Electric's ability to supply the RIGHT MOTOR and the RIGHT CONTROL for every food-products plant application. Perfectly matched motors and controllers promote greater efficiency. Investigate your drives; then discuss your modernization problems with G-E engineers. General Electric Company, Schenectady, N. Y.

200-595

## GENERAL ELECTRIC



# IRON, STEEL AND METAL MARKET

## Demand Increased 40 Per Cent Since August

Pittsburgh — [Special.] — Steel trade conditions were better in October than in September but there was no progressive improvement during the month. From late August to early October there was a marked rise in steel demand, totaling about 40 per cent.

In relation to capacity, steel ingot production was 14.76 per cent in July, 14.26 per cent in August and 17.34 per cent in September, while the official report for October may be forecast to show about 20 per cent, which in actual tonnage output would be 25 per cent of production in the record year 1929 and 30 per cent of production in the very active seven-year period through 1929.

The recent increase in steel demand was of highly miscellaneous character, no individual line of consumption standing out prominently, and this was in keeping with the steel trade predictions being made last July. The large consuming classes did not do much better. Smaller manufacturers began buying at more frequent intervals rather than in larger tonnages, and jobbers increased their buying, partly for a little replenishment of stocks and partly on account of heavier distribution.

The major part of the increase in steel tonnage was regarded as representing the beginning of recovery from depression, only a small part being attributed to seasonal influence.

October automobile production is forecast at about 65,000 units, making the smallest month in many years. No really heavy buying is expected before December, in preparation for January assemblies on a basis in keeping with the approach of a new season.

Rail buying is expected to be much heavier than the very meager deliveries taken for this year. The price reduction on standard rails from \$43 to \$40 a ton f. o. b. mill, the first change since the \$3 advance in October, 1922, is expected to help materially. As car loadings have been making an increasingly favorable showing the railroads are gradually showing more interest in the matter of repairing rolling stock.

In the latter part of October steel producers held that further recovery in demand was being prevented by the near approach of the election, moving some buyers to delay when they would have so little time to wait.

## Continued Encouragement

Birmingham — [Special.] — The eleventh month of the year starts off with much encouragement in the iron and steel industry in the South. An important incident the past month was the quotation by the Tennessee Coal, Iron & Railroad Company and other subsidiaries of the United States Steel Corporation, of \$40 a ton on standard steel rail, a reduction of \$3 per ton, the first reduction in 10 years. It was taken to mean that business from the railroads was expected to follow the concession. Another encouraging note of the past few weeks was the announcement that the Reconstruction Finance Corporation had made loans on self-liquidating projects which would require considerable cast iron pipe fittings.

The new president of the Goslin-Birmingham Manufacturing Co., Col. George M. Morrow, Jr., succeeding Julius Goslin, deceased, gave out a statement that bids were out on a number of development projects which promised to furnish work for the big machine shops over a period of months. The Hardie-Tynes Manufacturing Co., another of the larger machine shops of the Birmingham district, has been working day and night and has much business on hand and more in sight.

Five blast furnaces are now in operation in Birmingham, four on foundry iron and one on basic. The pig iron market continues slow. Prices are holding firm. The by-product coke works are being operated at more than 33 1/3 per cent capacity and better feeling in the market is noted on the turn of the month. A little coke from this district has been moving into Canada despite the new tariff law of that country.

Domestic coal requirements has brought a little better production. The numerous wagon mines, those which deliver by trucks from the mines which are not on railway lines, are active. A vein of coal is being developed near Boaz, above Etowah county.

Steel making pace of the Birmingham district is estimated at 25 per cent of capacity, based on ingot production. The sheet mills are still fairly active and jobbing mills are going good.

Structural steel fabricating shops continue their operating pace at above 50 per cent capacity and have recently been working on government and other structural work.

## Metal Prices Decline Despite Lower Surplus Stocks

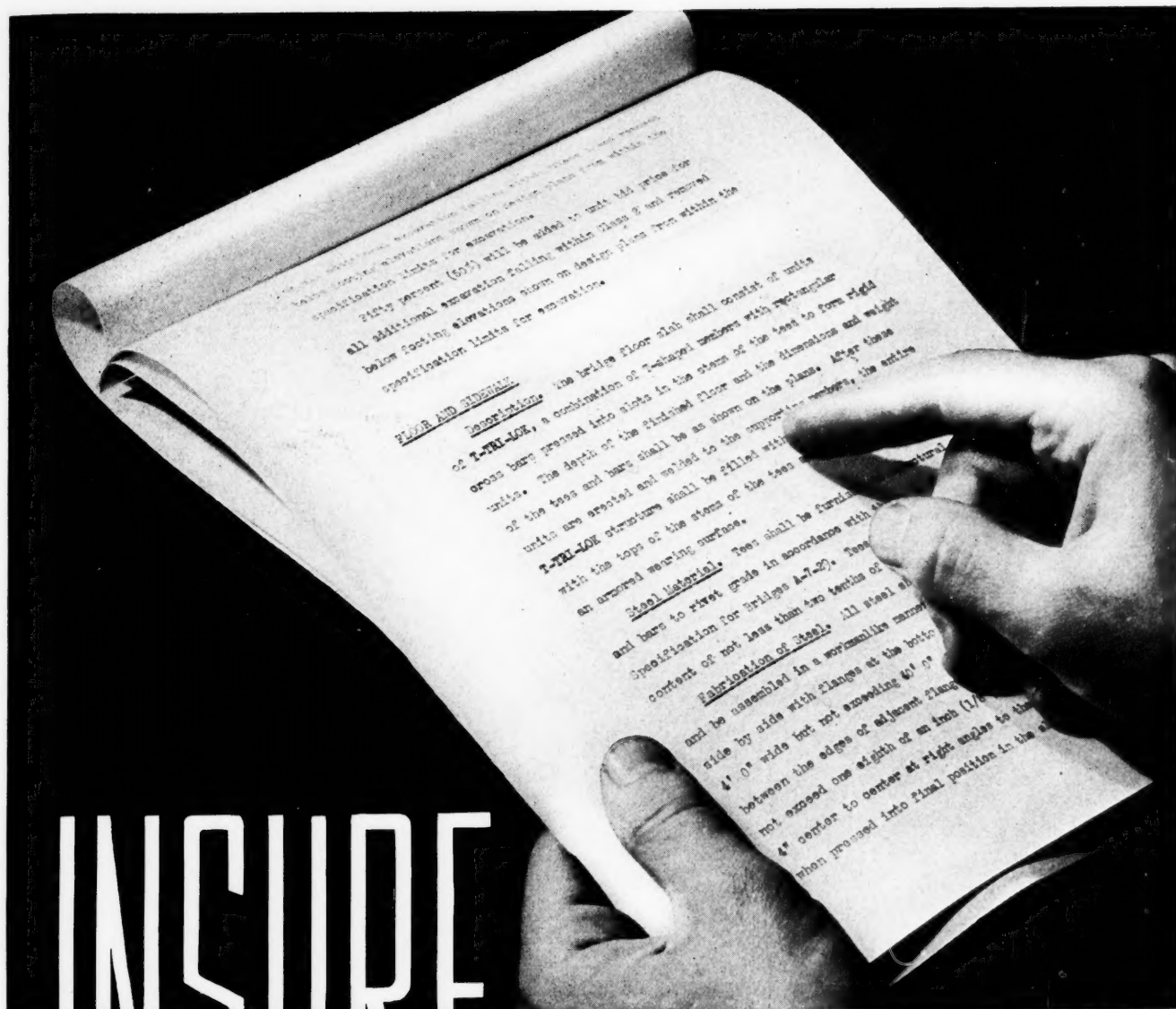
New York — [Special.] — Prices of the non-ferrous metals lost some ground during October. The most severe decline has been in copper which at the close of the month was selling as low as 5 1/4c as against 6 1/4c at the start of October. Zinc is only \$1 or \$2 per ton lower than at the start, with lead but \$1 per ton lower. Silver has broken below 27c per ounce and is at the bottom point for several months. Tin has also experienced some new lows, selling well under the 24c level which had become almost a standard price.

Most of the weakness of the metals took place during the closing days of October and perhaps were a register of disappointment that business recovery had not been more rapid. Uncertainties concerning the forthcoming election also played a part.

In one sense the lower prices of the metals has not been justified since the statistical position of most of the major metals has been improving rapidly, with shipments increasing, production declining or at least holding its own, which resulted in the desired end of declining surplus stocks, these usually being at the lowest level of the year. In some districts there has been a tendency to increase production to give employment.

World surplus copper stocks declined 3000 tons last month to a total in the hands of producers and fabricators of 793,000 tons. World production increased 3000 tons last month also. These changes are so slight as to have but little significance. As the month came to a close the inquiry for copper was somewhat better as consumers realized the bargain characteristic of prices. Of moment was the announcement that another conference of world copper producers will be held at New York about the middle of November, the last meeting of this nature having been held in October of last year. At that time the world producers agreed to curtail production and it is rumored that the conference will again consider methods of keeping production well in hand.

Demand for lead during the last week in October was the second best so far this fall, with sales of 5400 tons as against 9000 tons the third week in August. Battery manufacturers were the principal purchasers, being attracted by the low price of 3c per pound.



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B Y S P E C I F Y I N G

# T-TRI-LOK BRIDGE FLOOR CONSTRUCTION

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NOVEMBER NINETEEN THIRTY-TWO

45

# GOOD ROADS AND MOTOR TRANSPORT

## Tenth Annual Asphalt Paving Conference

The Tenth Annual Asphalt Paving Conference, sponsored by the Asphalt Institute of New York and The Association of Asphalt Paving Technologists, will be held at Roosevelt Hotel, New Orleans, from December 5 to 9. A business and technical program has been arranged to consider current problems of importance to highway officials, engineers, technologists and contractors. J. E. Pennybacker, Managing Director of The Asphalt Institute, is in charge of arrangements. Among those scheduled to speak are S. S. Lewis, Pennsylvania Secretary of Highways, W. R. Boyd, executive vice-president of the American Petroleum Institute, and Thomas H. MacDonald, Chief of the United States Bureau of Public Roads.

Representatives of 75 asphalt road equipment manufacturers will inform the conference on the latest technical developments pertaining to road building, thus making it serve as a clearing-house of the latest advances in road construction. Mr. Boyd will deliver an address on the general subject of The Diversion of Gasoline Tax Funds From Road Building Purposes, and Mr. Lewis will describe the Pennsylvania phase of farm-to-market county road building, which has attracted national attention since this type of practical farm relief was made an issue in the 1930 election. Already 2269 miles of the Pinchot 20,000-mile program have been completed at a cost of \$5300 a mile, it is said.

The main function of the forthcoming conference, explains Mr. Pennybacker, is to help road officials and engineers solve the question of how to make smaller road budgets meet expanding road building programs. Making the road fit its traffic will be a theme handled from technical, official and budgetary angles. The various conference subjects and speakers have been bracketed under the groups most likely to be concerned with each specific address and relevant subject of discussion.

### Highway Officials

Thomas H. MacDonald, Chief, U. S. Bureau of Public Roads. (Subject of address not yet announced.)

"How Pennsylvania is Solving the Farm-to-Market Road Problem"—S. S. Lewis, Secretary of Highways, Pennsylvania.

"The Menace of Tax Diversion"—W. R. Boyd, Executive Vice-President, American Petroleum Institute.

Committee Reports.

### Highway Engineers

"Factors Determining the Choice of Road Mix or Plant Mix, Respectively, for Low Cost Graded Aggregate Surfaces"—Representative of State Highway Department of California.

"Road Mix With Macadam Aggregate"—O. W. Merrell, Director of Highways, Ohio.

"Asphalt as a Resurfacing Medium for Pavements"—Elmer Lawton, Deputy Highway Commissioner, New York.

"Hot Mix and Its Place in the Highway Program"—Larry B. West, President, West Construction Company.

"Oil Mat Surfaces"—W. V. Buck, State Highway Engineer, Kansas.

"Cutback Asphalts—Their Characteristics and Use"—Prevost Hubbard, Chemical Engineer, The Asphalt Institute.

"Asphalt Priming Material—Character and Use"—W. H. Foushee, Senior Bituminous Engineer, North Carolina Highway Department.

"Emulsified Asphalt for Highway Construction and Maintenance"—J. G. Campazie, President, Headley Emulsified Products Company, Philadelphia.

"Emulsified Asphalt in Penetration Type Construction"—V. L. Ostrander, Shell Eastern Petroleum Products, Inc., Albany.

"Emulsified Asphalt for Mixing Type Construction"—C. L. McKesson, Director of Engineering and Research, American Bitumuls Company, San Francisco.

"Emulsified Asphalts for Surface Treatment and Maintenance Methods"—J. S. Miller, Jr., Director, Technical Bureau, The Barber Asphalt Company, Maurer, N. J.

"Developments in Asphaltic Types in Canada"—Representative, Ontario Department of Highways.

"Specifications for Liquid Asphalt Products"—E. F. Kelley, Chief, Division of Tests, U. S. Bureau of Public Roads.

### Paving Technologists

Annual Meeting and Technical Session of The Association of Asphalt Paving Technologists on December 7 and 8.

"Relative Viscosities of Liquid Asphaltic Materials at Various Test Temperatures"—J. T. Pauls, Highway Engineer, U. S. Bureau of Public Roads.

"Fundamental Properties of Mineral Fillers for Asphalt Mixtures"—J. S. Miller, Jr., Director, Technical Bureau, The Barber Asphalt Company.

"Method and Apparatus for Recovery of Bitumen"—Gene Abson, Director, Chicago Testing Laboratory.

"Estimation of Moisture in Cold Mixes"—A. R. Ebberts, Technical Director, Colprovia Roads, Inc.

"Laboratory Compression of Asphalt Paving Mixtures—Double Plunger Method"—H. L. Howe, President, The Association of Asphalt Paving Technologists.

Committee Reports.

"Developments in Road Equipment and Its Use"—B. E. Gray, Highway Engineer, The Asphalt Institute.

The first session of the conference will start on Tuesday, December 6, with an opening address by Governor O. K. Allen of Louisiana, followed by addresses by Mayor T. S. Walmsley of New Orleans, William H. Kershaw, president of The Asphalt Institute, and Henry L. Howe, president of The Association of Asphalt Paving Technologists. Mr. Kershaw will preside at the first day's meeting. Entertainment features have been provided, with one evening left open to enable visitors to arrange private dinner or supper parties.

Local arrangements are in charge of Bryson Vallas, general chairman.

## Important Link in Virginia Highway System

The bridge over Bennett's Creek, built for the purpose of relocating the road between Portsmouth and bridges owned by the James River Bridge Corporation, is an important river crossing recently completed by the Department of Highways, Richmond, Va. With the opening of the new bridge and the 18-foot roads constructed to connect with it, there is available a hard surface road from Newport News into Portsmouth and Norfolk. The distance from the north entrance of the James River bridge to the ferry dock in Portsmouth is approximately 24 miles.

The Bennett's Creek bridge has a total length 413½ feet and a 24 foot roadway, and consists of a 115-foot manually operated steel swing draw span, and five 35-foot and three 33-foot steel beam spans, all on reinforced concrete substructure, supported by timber foundation piles. The fender system is constructed of creosoted piles and creosoted lumber. The contract for the movable span was handled by the Roanoke Iron & Bridge Works, Roanoke, Va., and the balance of the work by Carpenter & Petrie, Norfolk, Va.

## Nominate Highway Officials

A nominating committee of the American Road Builders' Association, has submitted official nominations for officers for 1933-1934, and directors for a term of three years as follows:

**President**—H. C. Whitehurst, Director of Highways, District of Columbia, Washington.

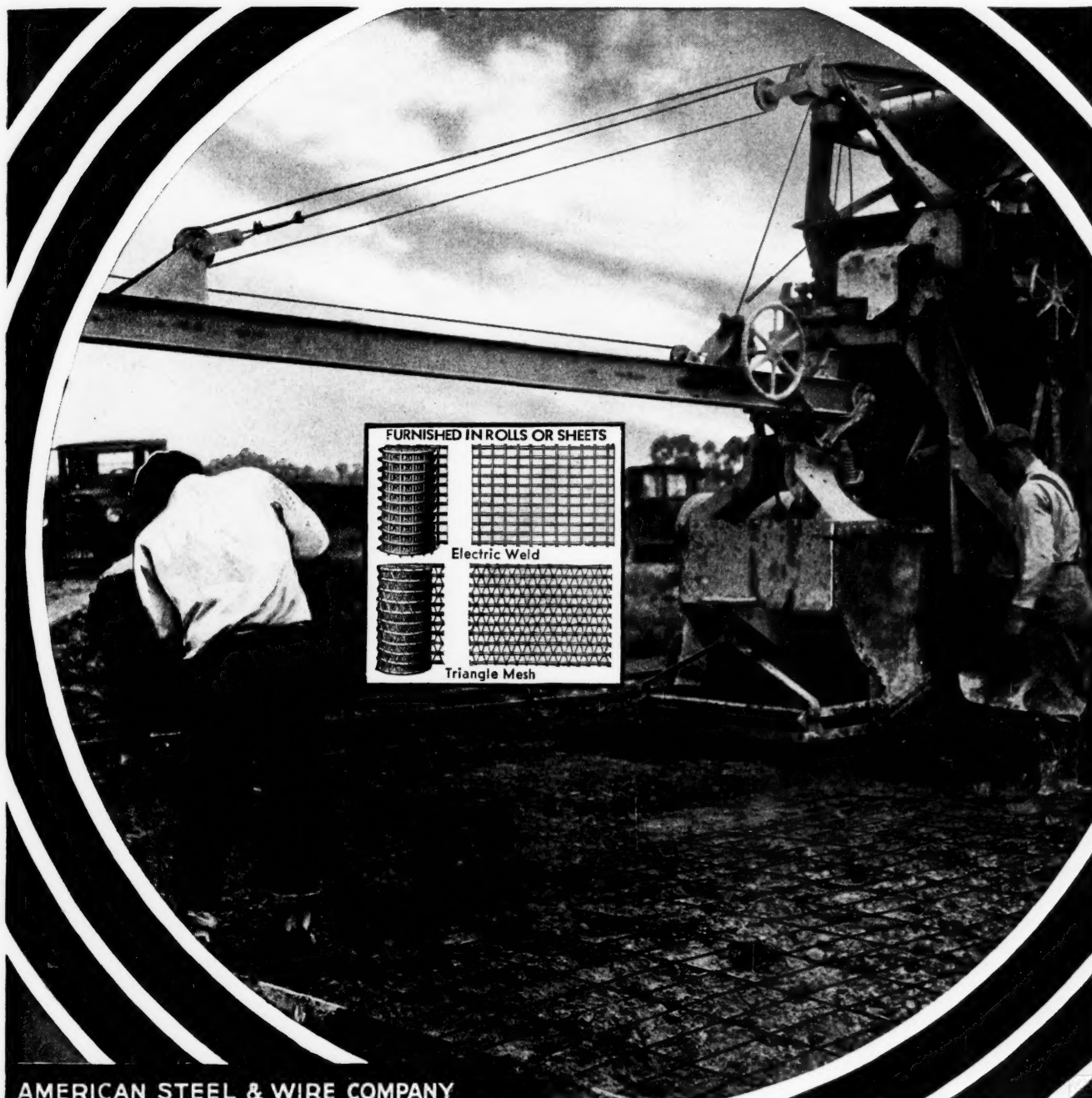
**Vice Presidents**—E. L. Benedict, vice president, Pittsburgh Steel Co., Pittsburgh, Pa.; Charles M. Upham, Engineer-Director, American Road Builders Association; Grover C. Dillman, State Highway Commissioner of Michigan, Lansing, Mich.; Stanley Abel, Supervisor, Fourth District Kern County, Taft, Calif.

**Treasurer**—James H. MacDonald, New Haven, Conn.

**Directors for term ending 1936**—T. J. Mahony, Chairman, Highways Advisory Board, Province of Ontario, Toronto; Otto Hess, Engineer-Manager, Kent County Road Commission, Grand Rapids, Mich.; H. J. Kaiser, Kaiser Paving Co., Oakland, Calif.; Wm. P. McDonald, Wm. P. McDonald Construction Co., New York City; Geo. F. Schlesinger, Chief Engineer and Managing Director, National Paving Brick Manufacturers Association, Washington; Carl O. Wold, Vice President, Caterpillar Tractor Co., Peoria, Ill.

State Board of Fund Commissioners, Jefferson City, Mo., have sold \$2,000,000 of 3½ per cent State Highway bonds to a banking group headed by the First National Bank of New York and Prescott, Wright & Snider of Kansas City, Mo., at \$1,900,000.





AMERICAN STEEL & WIRE COMPANY

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## Building for the Future

Road engineers have found in American Steel & Wire Company Wire Fabric the ideal steel reinforcement for concrete. No other form of reinforcing material possesses the same amount of binding or holding power.

When embedded in a highway, Wire Fabric acts as a steel backbone for the concrete—provides greater tensile strength, and prevents the opening of fine hair cracks which may form in the setting.

Wire Fabric is furnished in road size sheets, according to specifications. Let us send you complete information.

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# HIGHWAY AND BUILDING CONGRESS

The business volume of the construction industry for 1929, the last year for which the census data are available, was in excess of \$6,000,000,000 and the average direct employment of the industry is given as 828,772, with 1,031,000 people employed at the peak of the construction season. Estimated on the basis of two men being employed in the preparation of materials and equipment used in construction for everyone engaged in actual building activities, the industry employed directly and indirectly more than 2,650,000 in normal times. Further, estimating at least two non-workers dependent upon each worker, the average number of persons depending upon construction activities is 7,950,000, or 1 out of every 15 persons. Due to the diversity of construction and the widespread sources of materials and equipment, these workers are located in every section of the nation and their welfare is of concern to the entire population.

These figures indicate the scope of the construction industry which will be represented by those attending the Highway and Building Congress the week of January 16th next at Detroit, reminds Chas. M. Upham, Washington, general chairman of the committee on arrangements, who is of the opinion that the program of the Congress should go far toward restoring construction to normal.

"Even the figure which shows a volume of more than \$6,000,000,000 for those firms surveyed, a total of which partially reflects the industry's contribution to the national wealth, does not reveal the full scope of the construction," declares Mr. Upham. "For one thing," he says, "it does not include the operations of 113,000 small construction concerns whose annual business volume was inadequate to bring them within the scope of the survey. A still larger part of the aggregate enterprise which is not reflected in the figures used is that involved in the activities of states, counties, municipalities, railroads, public utilities and other public and private agencies which undertake construction work with their own personnel.

"A knowledge of the basic scope of the industry clearly indicates the vital importance of the Highway and Building Congress. It is not anticipated, of course, that the industry will be immediately restored to its potential stature as reflected in the figures quoted. By the same token, however, leaders of the participating organizations do not look upon those data as representing a maximum achievement which cannot be exceeded in the future."

Associations which have announced their intention of participating in the coming Congress include the following:

Construction League of the United States  
American Road Builders' Association  
Associated General Contractors of America  
Truck Association Executives of America  
The Asphalt Institute  
Associated Equipment Distributors  
National Crushed Stone Association  
National Paving Brick Association  
National Ready Mixed Concrete Association  
National Sand and Gravel Association  
Portland Cement Association  
American Institute of Steel Construction  
American Motorists Association  
American Society of Mechanical Engineers  
American Society of Municipal Engineers  
Canadian Good Roads Association  
International Association of Public Works Officials  
Highway Research Board  
National County Roads Planning Commission  
National Highways Association  
National Rural Letter Carriers Association  
Steel Founders' Society of America, Inc.

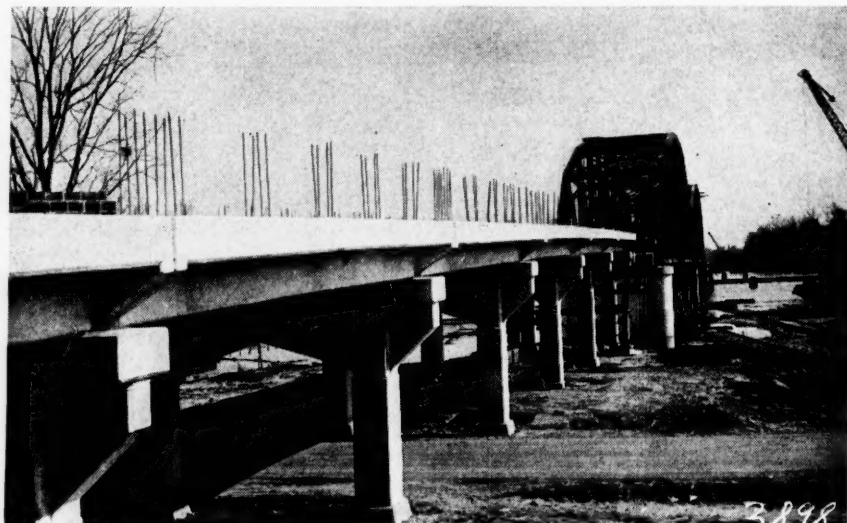
## \$530,000 Bridge

The Black River Bridge at Jonesville, La., on the Jonesville-Ferriday highway, involving an expenditure of approximately \$530,000, will be completed about December 1. It consists of three 250-foot fixed spans and one 320-foot swing span, with 30 concrete deck girder spans in the approaches, and approximately two miles of additional approach consisting of concrete paving on earth embankments, with creosoted pile fender system. All piers have been completed, together with the fender system for the pivot pier. All structural steel, including the swing span, has been erected and the majority of the concrete approach spans have been finished. Paving of the approaches on the fill is also completed.

Doullut & Ewin Inc., New Orleans, La., are the general contractors for the

## Concrete Deck Girder Spans and Structural Steel

Forming the Black River Bridge, at Jonesville, La., together with two miles of concrete paving laid on earth embankment approaches.



project. The principal subcontractors are as follows:

Structural Steel and Bridge Machinery—Nashville Bridge Co., Nashville, Tenn.  
Reinforcing Steel, Steel Piling, etc.—Jones & Laughlin Steel Corp., New Orleans, La., and Pittsburgh, Pa.  
Earth Embankment and Miscellaneous Approach Work—Forgy, Hanson & McCorkle, Inc., Tallulah, La.  
Sand and Gravel—H. W. LeTissier, Jonesville, La.  
Concrete Paving on Approach—Ben Flynn, Alexandria, La.

## \$13,000,000 New Orleans Bridge

The great engineering project calling for the erection of a combination railway, highway and footway bridge across the Mississippi River near New Orleans is about to become a reality. Proposed several years ago by the New Orleans Public Belt Railroad Commission, fulfillment of the project was assured with the recent decision of the Reconstruction Finance Corporation to purchase \$13,000,000 of bonds issued by the State of Louisiana and the City of New Orleans.

The structure will be more than 3½ miles long. Its construction will provide work directly for about 2000 men, and it is estimated that indirectly it will afford employment for 4500 additional workers.

The bridge site is about nine miles upstream from the main business district of the city. The bridge will rise 135 feet above the high water level of the Mississippi River, permitting the unobstructed passage of all types and sizes of vessels. Its erection will mean the utilization of approximately 60,000 tons of structural and reinforced steel, 200,000 cubic yards of concrete and masonry, 4,000,000 feet of lumber, and 1,200,000 feet of piling. The bridge will be the only structure to span the river south of Vicksburg, Miss.

The designing and construction engineers are Modjeski, Masters and Chase, New York City. The contract will be handled as follows: (1) Substructure of main bridge; (2) Superstructure of main bridge; (3) Substructure of approaches, and (4) Superstructure of approaches.

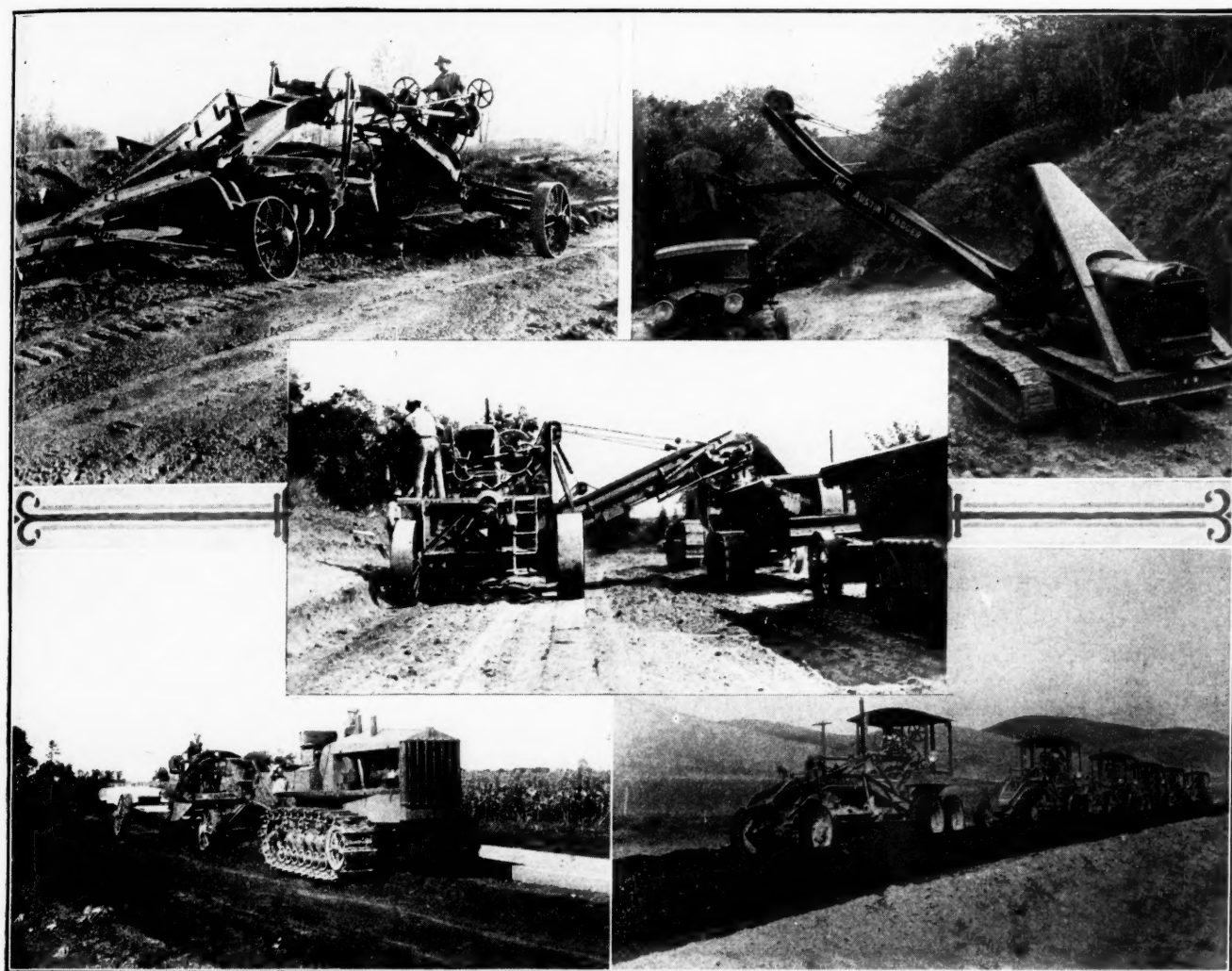


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## GREATER PROFITS from Present Day Contracts

Can only result from the use of New,  
Improved, High Speed Equipment!

Close bidding, federal and municipal labor regulation, the fluctuation of material prices, uncertainty of late season weather conditions—these are but a few of the reasons why profits on current contracts are doubtful. But of one thing you can be assured. You will get the ultimate in service rendered from every AUSTIN-WESTERN Equipment you buy. Improvements in design, refinements in manufacture, a greatly broadened line of interrelated machines, innumerable operating betterments and 1932 prices will help the profit sheet on every job.

The AUSTIN-WESTERN Equipment Line-up now includes the AUSTIN Badger, fully convertible Shovel, Crane, Dragline and Trench Hoe, the new AUSTIN Bituminous Distributor, the new

double spur gear drive CADET Roller in 5, 6, 7 and 8 ton sizes, the new No. 77 Full-Dual Drive Motor Grader, CLETRAC Tractors in 15, 25, 35, 55 and 80 H. P. sizes (sold in the CLETRAC AUSTIN-WESTERN territory), and a complete line of improved blade graders, elevating graders, crawler wagons, portable crushing, screening and washing plants, snow plows, etc.

There's a better AUSTIN-WESTERN Equipment for all road building, maintenance and earth moving jobs. Greater efficiency, fool-proof operation and extra years of service, even under most adverse operating conditions, are built into every unit.

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No. 351

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ROAD ROLLERS, CRUSHING & SCREENING PLANTS, SCARIFIERS,  
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MOTOR GRADERS, PLOWS & SCRAPERS, BITUMINOUS DISTRIBUTORS  
DRAGS, SHOVELS & CRANES, DUMP WAGONS, SNOW PLOWS.



# EQUIPMENT

## NEW AND IMPROVED

### Vibro-Spade for Concrete Placement

The Electric Tamper & Equipment Company, Ludington, Mich., pioneers in the manufacture of high frequency vibratory concrete placement machines, have added to their standard line the Vibro-Spade—a tool consisting essentially of a submergible vibratory motor, flexibly



For Walls, Piers and Other Reinforced Sections.

connected to a manipulating handle made in sections of aluminum tubing with a switch on the top section to facilitate starting and stopping. Concrete is placed by internal vibration of the mass and without segregation or honeycombing, each batch being consolidated homogeneously with those previously placed in a minimum of time and effort. Vibro-Spade operates on 110v. 3, 60cy. A. C. If three phase power is available on the job site in higher voltages only, the manufacturers can furnish transformers and will supply portable power plants in two, four and eight tool capacities for jobs on which commercial power is obtainable. Light in weight, these plants are built for severe service and are not affected by cold.

### Hydraulic Controlled Dump Wagon Equipment

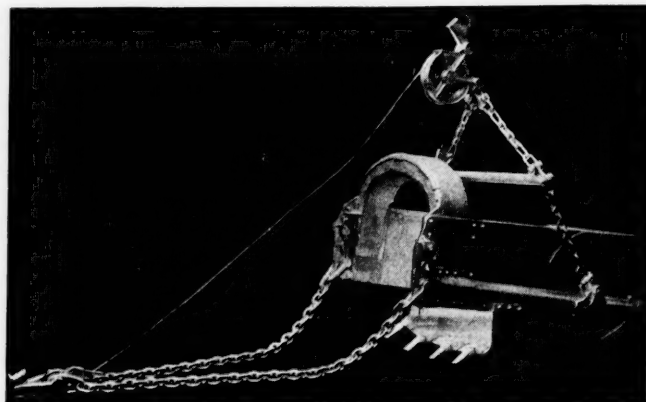
Trackson Company, Milwaukee, Wis., announce a hydraulically controlled door opening and closing mechanism for their complete line of bottom dump crawler wagons, which supplements without replacing the standard hand winding me-

chanism, the latter remaining intact at the rear of the wagon for emergency use and to perform certain other functions. The hydraulic mechanism is installed at the front of the wagon and is completely housed in a removable steel cover. Accessibility for the renewal of door cables and adjustments is a feature claimed by the manufacturers, and another is an automatic equalization of the door cable which eliminates sagging doors. The hydraulic cylinder installed on the front of the wagon is actuated by a hydraulic pump connected to the power take-off. Operations for opening and closing the doors are controlled by the tractor operator.

### Improved Dragline Bucket

In recognition of the severe test to which dragline buckets are subjected in levee construction and to meet the demand of contractors for equipment that will stand up under such grueling service, the Wellman Engineering Company, Cleveland, Ohio, builders of a complete line of Williams Fast Digging Buckets, have developed an improved type "DL" Williams Dragline Bucket incorporating many outstanding improvements. The bucket has welded stiffeners extending the full length of the bucket on the outside, interlocked with the bail attaching brackets—a cantilever type of construction which prevents pulling in of the lower front corners. It has a quick-opening hinged hitch which permits the use of a solid one-piece attaching clevis that enables the operator to quickly set the dragline chains at the best digging angle for the class of work to be done. Side walls are reinforced with an angle welded to the plate between the arch and back strap. The buckets are built in sizes ranging from 1¼ to 3 cubic yards rated capacity and are described in a new bulletin issued by the company.

Williams Type "DL" Dragline Bucket



### Retains Strength at High Temperatures

To meet a demand for an alloy which retains useful strength at higher temperatures, the Westinghouse Research Laboratories, East Pittsburgh, Pa., have developed Konal, according to Howard Scott of the Laboratories. This is a nickel base alloy consisting of about 18 per cent cobalt, 6 per cent iron and 2.5 per cent titanium. When aged after quenching, it hardens to approximately 300 Brinell, it is said, and so treated has a tensile strength of 75,000 lbs. with an elongation of more than 20 per cent at 600 degrees Centigrade. It is not only applicable to vacuum tube construction, but its ability to carry working loads at high temperatures is declared to make it valuable in large as well as small structures. It offers excellent resistance to certain types of corroding media—acids, moist air, moist sulphurous gases, etc.

### Pneumatic Tire for Tractor

The B. F. Goodrich Company, Akron, Ohio, announces the development of another new tire for tractor service, a pneumatic companion to its well known Zero Pressure. Known as the Tractor-Grader tire, the new Goodrich product is of the lug-type, built for road service, constructed for hard knocks and severe driving torque. Tread design is self-cleaning, built to give clean, positive sharp-edged gear wheel traction, while the herringbone design insures straight forward motion. The carcass is of unusual strength amply insulated with heavy gum coatings between each cord ply, and the thick tread is specially compounded to resist the abrasion and cutting of sharp stones. It was also designed to resist the destructive qualities of road oil and tar.

## A Complete Organization

Quick shipments via rail,  
truck, barge or scow from  
Baltimore, Md., and North  
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### **SAND** *Washed* **GRAVEL** *And* **SLAG**

*We Produce in Quantities to  
Meet Your Requirements*

. . . . . with years of  
experience in successfully executing large  
construction contracts of various kinds is  
prepared to undertake the construction of

CONCRETE, MASONRY AND EARTH  
DAMS . . . DRY DOCKS . . . RIVER AND  
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DREDGING OF ALL KINDS . . .  
HYDRAULIC FILLING AND ROCK  
WORK . . . SEWERS . . . TUNNELS . . .  
RAILROAD CONSTRUCTION . . . . .

### **The Arundel Corporation**

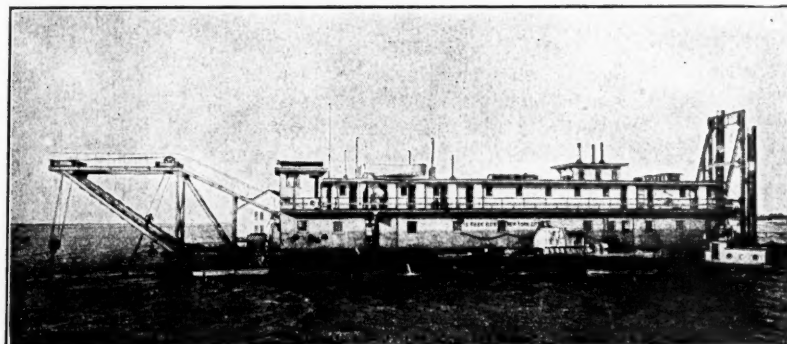
Main Office: ARUNDEL BLDG., Pier 2, Pratt Street

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BRANCHES: NEW YORK CITY—NORFOLK, VA.—MIAMI, FLORIDA

## DREDGING

FILLING, LAND RECLAMATION, CANALS, PORT WORKS  
RIVER AND HARBOR IMPROVEMENTS—DEEP WATERWAYS AND SHIP CHANNELS



We are especially equipped to execute all kinds of dredging,  
reclamation and port works in Southern waters.

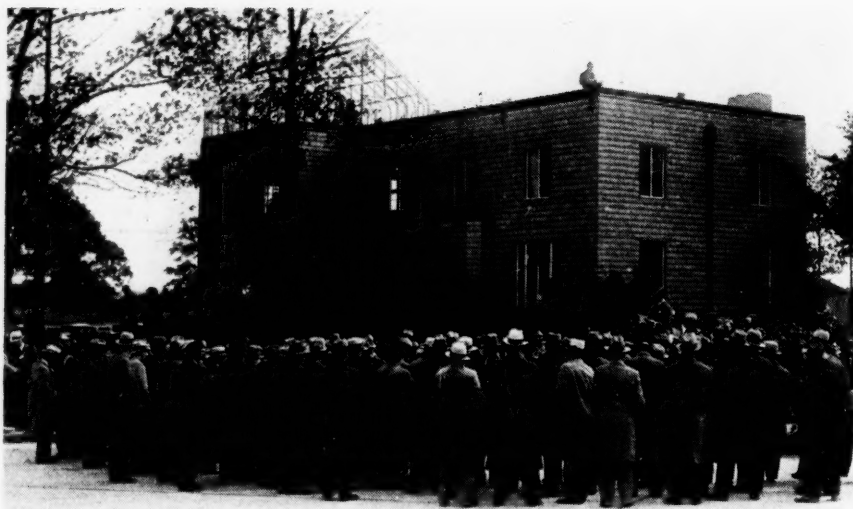
Correspondence invited from corporate  
and private interests everywhere.

*Contractors to the Federal Government*

## ATLANTIC GULF AND PACIFIC CO.

NEW YORK: 15 Park Row

HOUSTON, TEXAS: Scanlan Building



### All Steel House

A steel house built by a newly developed frameless construction method in a Cleveland, Ohio, suburb, is heralded as a marked advance toward the factory-built house. Made entirely of sheet metal not much thicker than a dime, yet possessing strength and rigidity, it consists of large sections assembled in the factory and hauled to the site, where all parts were welded together.

The walls are insulated. The exterior is finished in cream colored porcelain enamel metal. The house is fire resistant. It contains seven rooms, two baths, a double garage and a solarium on the roof.

Mills G. Clark, a former president of the Cleveland Real Estate Board, is the inventor of the frameless steel construction. He erected the first dwelling as an experiment in cooperation with the American Rolling Mill Company. The Westinghouse Electric & Manufacturing Company, the Celotex Company, Libbey-Owens-Ford Glass Company and a number of other firms also cooperated.

### Burroughs Business Machines

At the recent National Business Show in New York, the Burroughs Adding Machine Company, Detroit, Mich., had

Low Keyboard Bookkeeper



Absence Of a Frame Is An Innovation In This Steel House Completed Recently.

the largest display of business machines, as well as the greatest number of new products, that it has ever presented. There were 91 individual machines in the exhibit. Among new products shown for the first time were a low-priced, desk model bookkeeping machine for retail stores and small offices, a new adding machine that also subtracts easily and quickly, number of typewriters featuring a variety of type faces, carriages of different lengths, tabulating keys and other developments, several new cash registering machines and a number of advanced bookkeeping and typewriter-bookkeeping machine models.

### Sign-Lighting Control

The General Electric Company, Schenectady, N. Y., has developed a new type of sign-lighting control that flashes, dims or brightens the lamps with a wide variety of effects, and which requires neither moving parts nor electric contacts. The control may be applied economically to practically all incandescent-lamp signs, it is claimed, and when used with those which are lighted continuously produces a more attractive effect and at the same time reduces operating expense by from 40 to 60 per cent.

### Hydraulic Operated Bulldozer

The LaPlant-Choate Manufacturing Company, Inc., Cedar Rapids, Iowa, has developed a hydraulic operated bulldozer to be used on the "Caterpillar" 65 tractor, so designed that the tractor drawbar is in the clear at all times, permitting the tractor to be used for hauling wagons, tampers, scrapers and other units without removing any part of the bulldozer. Of rugged construction, the LaPlant-Choate Hylift bulldozer has been designed for both up and down pressure on the blade, with an extreme 34-inch high lift above ground level and an 18-

inch drop below ground level. Special shock absorbers have been provided for the protection of operating mechanism.

### Rolling Grilles and Gates

Based on successful principles of counterbalance, construction and operation used in the Cornell Rolling Doors, the manufacturers of that product, Cornell Iron Works, Inc., Long Island City, N. Y., have introduced Cornell Rolling Grilles and Gates. Grilles consist of rolled and pressed steel bars joined together with strong ornamental links with straight links in side guides. They travel up and down in two vertical cold rolled steel channel shaped guides, about 1 1/4 inches by 1 1/4 inches, and cannot be pulled out of tracks. When coiled up on a horizontal shaft, the grilles are between 10 inches and 16 inches in diameter. Cornell Grilles are also made with bronze, rustless steel, or aluminum rods and links.

While admitting light, air and vision, the Cornell Rolling Grille provides safety against trespassing and the entire opening is closed against intrusion. It is a permanent installation for replacing folding gates and knock-down, stationary or sectional grilles. There is no wear on rivets, rollers or small parts, the entire weight being supported by two large journals of the overhead shaft. Cornell Rolling Grilles are recommended for store fronts, entrances, gateways, counters, exterior or interior openings, entrances to cages and apartments to assure safety against robbery, and for various other uses.

Impossible Closed—Unnoticed Open







## The Trend To Better Roads *Brings a Decided Swing to* **Westphalt**

As more and more communities become aware of the economy of building roads of high type construction, more and more highway budgets include Westphalt, the improved asphalt pavement.

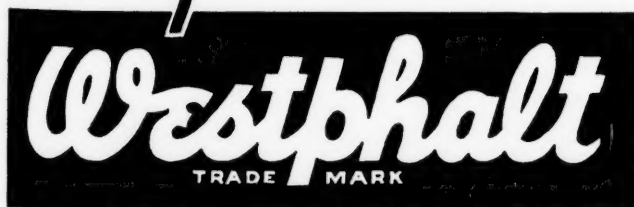
Westphalt is a ready-mixed asphalt paving material combining in one product the superior features of the hot-lay and the convenience and economy of the cold-lay types. This combination means smooth, durable, non-skidding surfaces laid with the least amount of labor and expense. No hot-mix plant is needed—Westphalt is heated on the job with a simple oil torch appliance.

There are Westphalt streets and highways in twelve states, from Michigan to Florida, where it has undergone long and rigid tests under every traffic condition and widely varying temperatures.

West Process Pavement Co., Inc., Louisville, Ky.

*For better, longer lasting highways*

**Specify**



- FOR NEW CONSTRUCTION •
- RESURFACING •
- MAINTENANCE •

LICENSEES:  
 Bituminous Sales Co., Lancaster, Pa. R. G. Lassiter Co., Raleigh, N. C.  
 West Process Pavement Co. of Va., Central Westphalt Pavement Co.,  
 Richmond, Va. St. Louis, Mo.  
 Tenn. Westphalt Co., Chattanooga, Tenn.



## Mascot Chatts

ASPHALTIC ROADWAY GRAVEL

ROOFING GRAVEL CRUSHED STONE

ASPHALT FILLER DUST

**American Limestone Company**

Knoxville

Tennessee

## CRUSHED LIMESTONE

**Best for All Purposes**

We manufacture all sizes of stone suitable for all classes of road building and concrete work where only a high-grade limestone is required.

Quarries opened up in 1912.

Capacity 8000 tons daily.

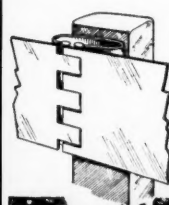
**Four Quarries**

Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.  
 Boxley, Greensville County, Va.

**W. W. BOXLEY & COMPANY**

Room 711, Boxley Building, -ROANOKE, VA.

## The Best Highway Guard Available



The rail is of galvanized plates, ends interlocked and supported under heavy tension by strong steel springs. The broad, smooth face tends to absorb shocks from impacts and turn traffic back into roadway. The Resiliflex Road Guard prevents serious accidents, safeguards lives and protects vehicles from damage.

Write for circular.

The National Traffic Guard Co.  
 215 Moreland Ave., N. E.  
 ATLANTA, GA.



## INDUSTRIAL NEWS

### 7500 kv-a Turbo Generator Purchased

As a part of a \$1,250,000 improvement program, the Bogalusa Paper Company, Bogalusa, La., has purchased a 7500 kv-a turbo generator from the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa. The purpose of the improvements, which involve new and original designs—a departure from regular sulphate mill practice—is to effect economies in manufacture, to conserve natural resources and to aid in stimulating business. The United Engineers and Constructors, Inc., Philadelphia, Pa., are consulting engineers.

### Moves Eastern Sales Offices

The United States Pipe and Foundry Company, Burlington, N. J., announce the removal of their Eastern sales offices from 905-9 Morris Building, Philadelphia, Pa., to 1624-30 Lincoln-Liberty Building at the northeast corner of Broad and Chestnut streets, Philadelphia.

### Tritle Heads Electrical Manufacturers

J. S. Tritle, vice-president and general manager of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has been elected president of the National Electrical Manufacturers' Association, to succeed former governor John H. Trumbull of Connecticut. The association was organized to coordinate and unify activities of the vari-

ous branches of the electrical manufacturing industry, with the objective of developing to its ultimate the use of electrical energy.

### Alco Products Increases Scope

Alco Products, Inc., New York, division of the American Locomotive Company, recently made an agreement with the Gyro Process Company, Detroit, Mich., whereby the former more than trebles the scope of its potential business by the acquisition of exclusive licensing, sales, engineering and manufacturing rights for the Gyro vapor phase cracking process for manufacturing anti-knock gasoline. This extension of activities of Alco Products, Inc., rounds out the company's engineering and manufacturing services for the gas and petroleum industries.

### General Electric Furnace Shipments

To meet an unusual demand which cooler weather brought upon New York distributors, 8 carloads of new General Electric oil-burning furnaces were shipped recently from the factory at Pittsfield, Mass., to New York City. "Business in the past two weeks has been so great that our factories are being pressed hard to keep up with the demand," declared J. J. Donovan, manager of General Electric's air conditioning department. Although this is the first season for the General Electric's new oil furnace, it is said to have met with wide approval and sales have been "most gratifying."

### Riehle-Torrington Manufacturing Arrangement

Under the terms of a manufacturing agreement between Riehle Bros. Testing Machine Company, Philadelphia, Pa., and the Torrington Manufacturing Company, Torrington, Conn., machines and instruments of the former will be manufactured by the latter at its Torrington plant. The Riehle organization will retain its corporate identity and continue its engineering and sales activities. It has been in business since 1825 and was a pioneer in the development of physical testing equipment in this country. The new arrangement assures the continuance of the Riehle organization's years of experience in the design of physical testing equipment and provides a superior machine building facility of its products. The Torrington Manufacturing Company, organized in 1885, specializes in the design and building of a variety of machinery, largely of a special nature, used in strip, sheet, tube, rod, wire and cable mills. It also has a manufacturing department for press and screw machine products.

### Morrow Heads Goslin-Birmingham

Col. George M. Morrow, vice-president of the Goslin-Birmingham Manufacturing Company, Inc., Birmingham, Ala., has been elected president to succeed the late Julius Goslin. This company, a consolidation of the Birmingham Foundry and Machine Company and the Joubert & Goslin Foundry Company, manufactures sugar refining machinery, Vallez filters, heavy iron castings and a wide range of special equipment and machinery for municipal waterworks, water power developments, sanitary projects, etc. At the time of the consolidation of the two Birmingham companies, Col. Morrow was president of the Birmingham Foundry and Machine Company.

(Continued on page 56)

## FREDERICK SNARE CORPORATION

### Harbor Works

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Railroads

Railroad Terminals

Warehouses

### CONTRACTING ENGINEERS

Difficult and unusual foundation and engineering problems a specialty

114 Liberty Street, New York

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### Industrial Plants

Sugar Mills

Power Plants, Dams,  
Reservoirs, Pipe Lines,  
Tanks.

## TARPAULINS

Waterproof and Plain - - - All Sizes  
Immediate Delivery - - - Manufacturer's Prices  
Canvas in every weight for every use.

ATLANTA TENT & AWNING COMPANY  
Box 974 ATLANTA, GA.

## SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete  
Roads and Buildings

Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.

## Prompt Shipment of Sand and Gravel from this Plant

Capacity two tons a minute day and night.  
Plant served by five railroads. Located

within switching distance of Augusta, Ga.  
Send us your specifications.

**Georgia Sand & Gravel Co.**

E. W. Hancock, Pres.

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Phone 1932



# Legislation is Helpless against WEATHER DAMAGE



—but **BRICK** stops *weather*  
as well as traffic damage

**W**EATHER and traffic are the two destroyers of pavements . . . Traffic damage can be held in check, either by legislative restriction, or by using a brick surface . . . But *only* a brick surface can prevent weather damage during the 20-40 years of life that every pavement ought to have . . . Specify the use of brick on new projects and on resurface jobs.

. . . . .

National Paving Brick Association, 1245 National Press Bldg., Washington, D. C., announces its 27th Annual Meeting will be held at Detroit, January 17-18, with the public invited to the January 18 sessions. Please note that the A. R. B. A.—Convention—Road Show, is at Detroit January 16-20.



The buffalo head symbolizes strength and stamina . . . two essentials of any good road rollers. When in the market think of the buffalo head . . . weigh these facts:

Oldest make of rollers. Most universally used make. Not the lowest priced, but admitted to be the most dependable and longest-lived roller your money can buy.

Then specify a Buffalo-Springfield in the interests of ultimate economy of purchase.

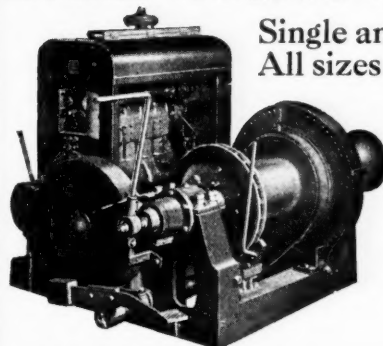
State your needs and have us suggest the type and size to conform.

THE BUFFALO-SPRINGFIELD  
ROLLER COMPANY  
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## DAKE HOISTS- Gasoline & Electric

Single and Double Drum  
All sizes from 2 to 27 h.p.



Are convenient, efficient, dependable and enduring. Rigid, sturdy construction insures lasting alignment. Interchangeable parts. Alemite lubrication. Low maintenance cost.

Send for catalog  
and prices

DAKE Engine Company

Grand Haven  
Michigan



## Finish the job faster and make more profit

Compare Williams bucket capacity with that of other makes—and your choice will be a Williams.

Power-Arm, Multiple-Rope  
and Dragline types.

Write for Bulletins.

# WILLIAMS

FAST-DIGGING BUCKETS

THE WELLMAN ENGINEERING CO.  
7003 Central Ave., Cleveland, Ohio



#### National Equipment Sales Manager

The National Equipment Corporation, Milwaukee, Wis., announces the appointment of Carl S. Wagner as general sales manager. He has been actively connected with the construction equipment industry for many years and his previous connections and experience should bring to the Koehring, Smith, Parsons and Quick-Mix divisions of the National Equipment Corporation a thorough appreciation of construction problems.

## TRADE LITERATURE

**Excavators.**—Bulletin 3210, issued by the General Excavator Company, Marion, Ohio, is devoted to General Excavators—shovel, pullshovel, clamshell, dragline, back filler, skimmer, crane. Built in a modern plant by modern methods in mass production, each machine is designed for efficient and low cost operation.

**Scratch Extensometer.**—Bulletin No. 40 issued by the Baldwin-Southwark Corporation, Philadelphia, Pa., describes and illustrates the Scratch Extensometer. The device may be attached to light as well as heavy

structures for recording tension-compression strains. When shear strain alone is to be recorded, it is necessary to make a special adaptation.

**"Caterpillar" Diesel Engine.**—Since the Caterpillar Tractor Co., Peoria, Ill., introduced the "Caterpillar" Diesel Engine about a year ago, it has successfully operated in agriculture, contracting, strip mining, logging and Government work, especially in levee construction. The engine is described in detail in a booklet just issued by the company, and its design and construction comprehensively illustrated.

**Roofdecks—Window Muffler.**—Two new folders have just been produced by the Truscon Steel Company, Youngstown, Ohio, manufacturers of steel products—one devoted to Truscon Ferroconcrete Roofdecks, a combined insulated waterproofed steeldeck roof and acoustical treated ceiling, and the other to Silentaire, a new non-mechanical muffler for double hung windows.

**Construction Management.**—Under the title of "Economics of Construction Management," the Gillette Publishing Company, Chicago, has issued the first edition of a volume by J. L.

Harrison, Division of Management, United States Bureau of Public Roads. The book contains 330 pages and is priced at \$3.75.


**Pug Mill Type Mixer.**—The Asphalt Equipment Company, Inc., Scottsdale, Pa., is distributing a circular illustrating and describing its Heavy Duty Pug Mill Type Mixer, "newly designed for increased efficiency and low cost maintenance." This mixer is built in 500-pound, 1100-pound, 2000-pound, 3000-pound, 4000-pound and 6000-pound capacities. Among the products of the company, in addition to mixers, are: Heating kettles, asphalt plants, road rollers, boilers, dryers and tanks.

**Chemical Engineering.**—The Chemical Catalog Company, Inc., New York, has issued the 1932 (seventeenth annual) edition of Chemical Engineering Catalog, presenting condensed and standardized catalog data of equipment, machinery, laboratory supplies, heavy and fine chemicals and raw materials used in industries employing chemical processes of manufacture, with classified indexes of such equipment and materials, carefully cross-referenced. There is also a technical and scientific books section cataloging and briefly describing books in English on chemical and related subjects.

### STEEL PLATE CONSTRUCTION TANKS STACKS DREDGE PIPE

Acid Tanks	Digestors	Jacketed Tanks	Settling Tanks
Breechings	Dryers	Molasses Tanks	Standpipes
Condensers	Filters	Oil Storage Tanks	Still
Coolers	Gasoline Tanks	Pressure Tanks	Vacuum Tanks


**LANCASTER IRON WORKS**  
LANCASTER, PA.

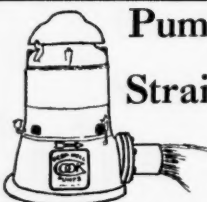


## Owen Buckets

Stronger and Built to Last Longer,  
Owen Buckets get 'A Mouthful at  
Every Bite' and More Bites Per Day.

OWEN BUCKET CO.  
201 BREAKWATER AVE. CLEVELAND, OHIO





### Pumps—Deep-Well Plunger and Turbine Strainers—and other well supplies

**WATER PRESSURE SYSTEMS**  
**A. D. COOK, Inc.**  
Lawrenceburg, Indiana

## SAND PUMPS

A wide range of  
types in sizes 4" to 15"

For belt drive and for direct  
connection to motor

*Illustrated booklet on  
request*

**GEORGIA IRON WORKS**  
AUGUSTA, GA.

## WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies,  
Rayon Manufacturing Plants, Textile Finishing Establishments,  
Raw Water Ice Plants, Laundries, Etc.

**ROBERTS FILTER MANUFACTURING COMPANY**  
604 Columbia Avenue Darby, Pennsylvania

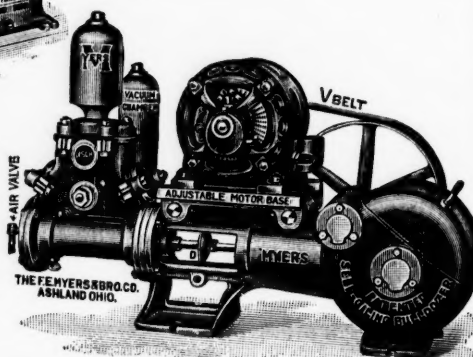
## SHALLOW WELL MYERS DEEP WELL POWER PUMPS



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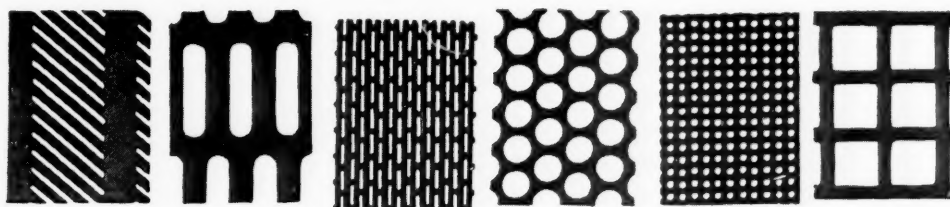
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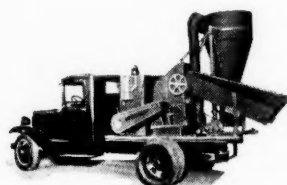
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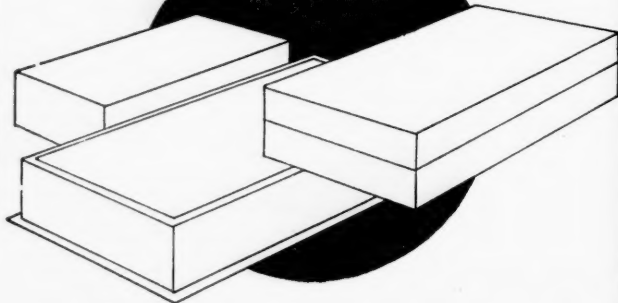


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## TEXTILE NOTES

### Increased Cotton Consumption and Exports

Southern mills consumed 407,966 bales, or about 83 per cent of the cotton used in all American mills in September. The total cotton consumption of 491,655 bales in September was 90,000 bales more than in August, about double the July consumption and the largest for any month since April. For the two months ending September 30, cotton consumption reached 894,256 bales in the United States, a 5000 bale gain over the similar period of last year. The South's consumption was 746,136 bales, or an increase of 27,000 bales.

Exports for the first two months of the present season, amounting to 1,185,819 bales, were 50 per cent above the corresponding period of last season.

The increase in domestic cotton spinning activity from July to September was the greatest of any period of similar length since monthly activity records became available in 1912, and the New York Cotton Exchange Service states it was probably the greatest increase in such a period in the history of the industry. In July mill consumption was at the rate of about 12,400 bales per day and in September consumption had jumped to about 20,700 bales per day; and the October rate will be about the same as September.

### Mill Stocks Low

Mill stocks of carded cotton cloths, reported October 13 by the Association of Textile Merchants of New York, were less than three weeks of current production at the end of September, and set a new low record. Unfilled orders amounted to 444,028,000 yards, a greater backlog than at the same date in the boom year 1929. Continuance of good sales into the early fall has been encouraging.

### World Cotton Supply

The indicated American crop of 11,425,000 bales, while an increase of 115,000 bales as compared with September 1 forecast, is 5,671,000 bales less than the record crop of last year. On the basis of incomplete returns, it appears probable, says the New York Cotton Exchange, that world production of cotton this season will be around 21,700,000 bales. This is the smallest crop in nine years and compares with 26,294,000 bales produced last season, or the maximum of 27,804,000 bales produced in 1926-27. The world carry-over of all kinds of cotton at the beginning of this season, amounting to 17,295,000 bales, was 3,300,000 larger than last year and the largest on record. The supply this season, including production and carry-over, will be about 38,995,000 bales, or 1,247,000 bales less than last season.

### Buying Local Cotton

In some sections Southern cotton mills have been buying more locally grown cotton and paying more for extra quality cotton. This offers the farmers an incentive to grow uniform staple of the desired length required by the mills in their section.

### Cotton Uses

Definite progress has been made in developing new uses for cotton through various agencies interested in the cotton industry. New products have been created for special applications in many industrial lines. In featuring new uses for cotton the Cotton-Textile Institute, Inc., at its annual meeting in New York, displayed models of a "cotton house" of low cost construction. These models by Lawrence Kocher, architectural authority and editor of the Architectural Record, showed the use of cotton fabric walls, both interior and exterior, and cotton fabric roof. One design contained living and dining rooms, bedroom, bath and kitchen, with the roof area used as a sun deck. Its cost erected and fully equipped



with plumbing and other accessories, is estimated at from \$1500 to \$1750.

The "cotton house" as erected would have a wood frame enclosed with light material such as plywood and the whole covered with cotton canvas on both the inside and outside. About 800 square yards of cotton fabric would be required. Insulating material and an aluminum-faced felt paper which reflects sunlight and heat would be placed between the outer and inner cotton walls to assure the utmost living comfort in any kind of weather and also for complete soundproofing. Interior cotton partition walls would also be insulated and soundproofed. The design included a cotton garage in which is housed a modern hot air heating plant for the home.

Cotton fabric and other materials used in construction would be fully fireproofed. The construction lends itself to pleasing color treatment since the cotton exterior walls can be painted as desired.

Other exhibits of cotton uses that have passed the initial experimental stage included cotton fabric as a roofing material for the renovation and restoration of old roofs, particularly those of industrial plants. A "cotton road" was illustrated by a section of highway showing the actual use of cotton fabric as employed in construction of a 2½-mile stretch of highway at Baton Rouge, La. A detailed description of this work was given in an enlarged photostatic copy of an article published by the MANUFACTURERS RECORD in July. South Carolina made use of cotton fabric in road construction several years ago and the State Highway Department has been checking the experiment in order to be able to determine the wearing qualities over an extended period. Texas, also has been experimenting along the same line.

Another new use for cotton, following three years of intensive promotional effort by the Institute, in collaboration with other interests, has been found in the packaging of farm and factory products. The exhibit included samples of the millions of cotton bags now used for the marketing of potatoes, nuts, citrus fruits, sugar, fertilizer and other products.

Following successful test shipments last year, the California Walnut Growers Association is now making use of cotton bags. On the first order 75,000 heavy cotton sacks of the 100-pound size and 400,000 cotton "pockets" of the 4-pound size have been purchased. The use of cotton bags in this field follows their adoption by pecan growers and their extensive use for packaging of other foodstuffs.

Cotton's great success in a style way during the past summer was visualized in the display of men's cotton suits. Cotton hats, cotton fabric shoes, cotton cloth stationery and an interesting innovation—cotton bridge cloth—were also exhibited.

#### Chemical Cotton Products

Dozens of uses of chemical cotton from former waste materials have been developed and certain cotton by-products now go into materials worth more than those which pure cotton creates. Cellulose made from cotton is used in making rayon and other textiles, sausage casings, moving picture films, imitation leather, gun powder, paper filler, lacquers, celluloid, surfaces for materials and a recent invention of the Eastman Kodak Co., kodapack, and others.

Discoveries are reported in Germany that glucose and alcoholic beverages can be made from cellulose. The United States Bureau of Chemistry is urging chemists of the nation to devise ways by which cotton fabrics can be made waterproof, which would vastly increase the use of cottons for outdoor purposes. The treatment sought would apply to awnings, tents, sails, wagon and truck covers, haystack caps, tobacco shade cloths and similar products.

A creaseless cotton fabric has been developed by Manchester, England, textile interests and two American companies are reported to have secured rights to manufacture it in this country.



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Remember, Genasco is a roof you can forget, for 10, 15 or 20 years after it is laid. A surety bond by a recognized company protects the owner.

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## ITEMS OF INTEREST

**ALUMINUM WINDOW PANES**, which are said to be so transparent that they may be used like glass, are now being manufactured in Germany. A material has been produced from aluminum suitable for glass roofs, skylights, window panes, as well as for the manufacture of numerous household articles. Although the glass-like aluminum loses many elements of the metal in the course of manufacture, it retains the primary character of the raw metal. The aluminum "glass" eliminates the yellow rays of the sun.

**WHOLESALE COMMODITY PRICES** in the United States have advanced by almost 6 per cent since June 30 to September 30, according to a statement released by the Foreign Trade Council. Following a steady fall for the preceding seven months during which wholesale prices fell from November 1931 to last June by an accumulated total of 13 per cent, the reversal of this trend is one of the most encouraging signs of returning business stability.

**MUTUAL SAVINGS BANK** deposits are \$1,233,000,000 higher than they were at the peak of the boom. Total savings bank deposits exceed \$29,000,000,000, equal to more than \$1000 for every family in the land. Our total stock of gold is approximately \$4,000,000,000. The total amount of insurance now carried is estimated at \$109,000,000,000, and the weekly income of the American people is estimated to be \$1,000,000,000. All of this would seem to refute statements continually heard that there is no money available for spending.

**PAPERHANGERS** in Great Britain may now put up wallpaper by a machine roller, according to the Commerce Department. The machine works on a simple principle. A roll of wallpaper is fitted on to a steel rod having two guiders to keep it central and is then drawn over a hardwood roller partly immersed in the paste contained in a tank. Two small rollers under which the paper passes, provide the necessary tension, smooth running and even pasting of the machine.

**FARM WAGES** are now the lowest in 30 years. The farm wage index, computed by the Bureau of Agricultural Economics, was 84 per cent of pre-war standards on October 1, a decline of 3 points since July 1, and a decline of 29 points since October 1 a year ago. As a general rule, farm wages rise during the third quarter of the year. The average scale for the country is now \$1.19 a day for farm labor without board. The upturn in farm commodity prices during the last few months may be expected to increase this scale.

**THE WESTINGHOUSE RESEARCH LABORATORIES** have developed more precise thermostatic metals for heat control in industry. The most versatile of available thermostats are those using bimetal as an actuating element. By using one of the new low expansion alloys with an austenitic nickel-manganese steel, a difference in expansion of 20 millionths is attainable at 300° C.

**THE GENERAL ELECTRIC COMPANY** has developed a photo-flash lamp which accurately measures 1/1000th of a second. This device will enable newspaper and commercial photographers to undertake action pictures at night and in dim interiors with an assurance of success.

**FRANCE** sends news of a seasonal acceleration of business in contrast to a long period of decline in trade and industry and a steady increase in unemployment. The steadily mounting deficit in government finance, however, is reported to be aggravating the uncertainties of the business outlook.

FOUR THOUSAND MILES of water mains in New York City distribute 1,000,000,000 gallons of water daily through the five boroughs. They vary in size from huge pipes 66 inches in diameter to those that measure only 6 inches. Some of the iron pipes date back to the days when they replaced the wooden ones that constituted the first water system organized by the Manhattan Company. Eighty-eight thousand valves are located largely at street intersections to safeguard the city against bursting mains. The act of opening or shutting a large valve takes about one hour.

NEW LOW PASSENGER railroad rates have been sufficiently productive to warrant their continuance, according to a report from a Southern Railway official. Since the new rates went into effect passenger travel has been more than doubled and has done much to curtail the inroads made by public bus lines and private cars upon steam railroad passenger travel.

UNEMPLOYMENT figures of the United States do not compare very favorably with those of the larger European countries. Approximately 34 per cent of the workers in the United States are unemployed, while there are 28 per cent unemployed in Germany, 23 per cent in Great Britain, 22 per cent in Austria, and 30 per cent in Denmark, according to trade union figures. The proportion of unemployment in the United States has risen from 31 per cent to 34 per cent in three months, as compared to 26 per cent in August 1931.

JAPAN is exporting electric lamps to the United States at the rate of \$9,000,000 a year. Last year the total reached 70,000,000 as compared to 37,000,000 in 1928. The Japanese product is sold here below the actual domestic cost of the raw materials essential to lamp manufacture. In this case American labor is competing with Japanese labor, whose wages average from one-seventh to one-fifth of our wage rate. The Japanese female factory worker earns from \$100 to \$160 per year, against \$800 here. The skilled Japanese mechanic earns from \$250 to \$300 annually, against \$1500 here. A higher tariff in this instance would evidently be appropriate.

RUBBER TIRES are now used on Danish railway cars, affording silent operation, freedom from side-swing, rail shock and vibration. A low pressure rubber tire has been developed for wheelbarrows by the B. F. Goodrich Company of Akron, Ohio. This constitutes one of the few major changes made in wheelbarrow construction in many years. Through their use it is possible to use wheelbarrows in mud and deep sand where the old type wheels found motion difficult if not impossible.

THE UNITED STATES LINES have done much to strengthen American shipping on both the Pacific and Atlantic. They have launched two of the largest ships built in America and are contemplating the ordering of a new ship of unsurpassed size for Atlantic trade.

CARBON DIOXIDE checks the decay and softening of fruits and helps to maintain the sweetness and freshness of such products as sweet corn and peas, reports the United States Department of Agriculture. Carbon dioxide treatment may be given by using solid carbon dioxide along with the ice in the standard refrigerator car. The exposure of some fruits to the gas for too long a period may result in an objectionable change in flavor, although exposure for less than 24 hours is not apt to be damaging.

NEW LIFE INSURANCE sold in September showed the smallest decrease compared to the same month last year since February, 1932. For the first nine months the volume of new business was 15.4 per cent below the amount for the same period last year. In September the decrease was only 11.1 per cent as compared with the same month in 1931.

# Pensions for Employees

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A good job is a better job when a pension goes with it.

Employers are coming to accept this view.

Employees endorse it by the high percentage which enrolls when the plan is on the save-as-you-earn basis.

A sound company like The Prudential can fill an important place in these modern pension programs.

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Please write on my letterhead to Group Pension Department, The Prudential Insurance Company, Newark, N. J. Ask them to send a copy of "A Little Book about Pensions."



## FINANCIAL NEWS

### To Finance Rehabilitation Programs

The Rehabilitation Corporation of New York has been formed by a group of manufacturing interests to finance up to a total of \$40,000,000, modernizing, improving and repairing projects under the movement to rehabilitate American industry.

The Rehabilitation Corporation will function in co-operation with the owner's architect, planning and supervising a complete rehabilitation job which will produce maximum income possible, bearing in mind that the income must be in keeping with the cost of the work. It will do this in consultation with leading real estate firms, so that before proceeding with any work a true picture of the probable outcome of the operation will be known. Bids will be obtained from reputable contractors and the work will be awarded to the lowest bidder, the Corporation arranging to finance the operation for the owner, so that he is relieved of even the actual payment to the contractor. Down payments of 10 to 20 per cent of the total cost will be required and the balance spread over a period of from one to three years.

The Rehabilitation Corporation is sponsored and formed by the following:

Anaconda Copper Mining Company and its subsidiary, the American Brass Company, the Crane Company and the First Bancredit Corporation of Minneapolis and St. Paul. Associated in the movement are: Bigelow Sanford Carpet Company; Carrier Engineering Company; Devoe and Reynolds; Johns-Manville Company; Kerner Incenerator Company; Morse Boulger Company; Otis Elevator Company; Petroleum Heat and Power Company; Preferred Utilities Company; Simmons Company; Richard E. Thibaut, Inc.; United States Rubber Company; Westinghouse Electric and Manufacturing Company and other firms of like standing.

### Reconstruction Finance Loans

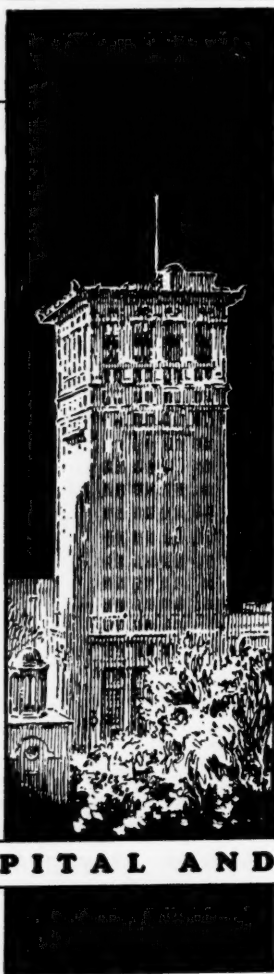
Advances of \$1,194,000,000 in actual cash loans to aid agriculture, commerce and industry were made by the Reconstruction Finance Corporation for the first eight months of its operation. From February 2 to October 1, more than \$1,550,000,000 in loans to 8235 borrowers were authorized, but \$44,000,000 were later withdrawn or cancelled. Repayments, inclusive of money unallocated, amounted to \$185,000,000 leaving \$1,009,000,000 outstanding as of September 30. Advances to States and political subdivisions totalled \$35,455,000 up to October

1. The Corporation's financial operations at the beginning of October involved about one-third of the \$3,800,000,000 fund placed at its disposal by Congress.

### Money for Safe Investment

Government borrowing on short-time paper at the rate of only a fraction of one per cent is an indication that money is available for investment purposes which have assurance of safety. An offering by the Federal Government of \$450,000,000 of 4½-year 3 per cent Treasury notes dated October 15 was oversubscribed 18 times. If actual cash was used, nearly all the gold in the world would be required to pay this huge oversubscription of \$8,668,000,000. It represented \$2,719,000,000 more than the amount of money actually in circulation and is within \$951,000,000 of all the money in the United States. While the general investment market is not responsive to long-term bond issues, the growing surplus of bank reserves has created an enormous investment demand for short and medium term securities. Commercial banks have also shown a partiality for Government securities and this has caused complaint in some quarters that investment banking interests are thus limiting their ability to finance private business to the extent now needed to speed recovery. With bank reserves at a high point, increasing confidence on the part of bankers and the public will release this potential store of credit, and insurance companies which like the banks have kept in strong liquid condition, will also enter the market for sound securities of private business.

(Continued on page 64)



First and Merchants' statement of condition (which we shall be glad to mail you) gives an unusual picture of liquidity and soundness. First and Merchants' directorate—and its position as Richmond's oldest, Virginia's largest — confirm that impression.

## FIRST AND MERCHANTS National Bank of Richmond

John M. Miller, Jr., President

**CAPITAL AND SURPLUS SIX MILLION DOLLARS**

# BUSINESS IMPROVES

Returning confidence in business futures has resulted in the higher evaluation of securities, the strengthening of commodity prices, and an increase in the purchasing power of the American people.

Problems are presented during this period of adjustment which require cooperation, experience, and counsel.

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every reasonable service.*

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fer Agent.

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COMPANY**

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## U. S. Steel Dividend

A feeling of relief swept over the business world when the announcement was made that the regular quarterly preferred dividend of \$1.75 would be paid by the United States Steel Corporation on its preferred stock. It meant more than the fact that the Corporation was maintaining a 31-year dividend record on that issue. It meant that the directors of the Steel Corporation look for better business in the future despite the interruption of a political campaign. Ingot production has steadily increased since July and for the first time in several months production was below shipments. Unfilled orders on September 30 were 1,985,000 tons. Inventories have been reduced approximately \$36,000,000. The Corporation's cash balance on September 30 was \$82,000,000 and the market value of its holdings of United States Government bonds was \$48,000,000 although for the nine months ending September net loss totalled \$54,542,000.

## General Electric Stockholders

The number of stockholders of the General Electric Company, as of September 30, was 178,579, an increase of more than 5000 in the third quarter of the year and a gain of more than 38,800, or 28 per cent, over a year ago. Ever since 1925 there has been an uninterrupted increase in the number of General Electric shareholders. The number of new stockholders for the year ending September 30 is larger than the entire number of stockholders in 1925.

## Contractors Urge Use of Trade Acceptance

Considering ways to curb credit abuses within the construction industry, the Associated General Contractors of America, according to Edward J. Harding, managing director, urges the substitution of trade acceptances for open-book accounts in the sales of materials and supplies to contractors. Adoption of such practices, it is believed, should go far toward discouraging the extension of credit to irresponsible contractors.

## State Financing

Starting its fiscal year 1933 with a favorable treasury balance of \$2,900,000, Maryland's State Government joins Virginia and other States which have managed to keep within their budgets, in line with the general trend for economy in government. It is reported that virtually all State officials in Maryland charged with the expenditure of appropriations saved 5 per cent of the funds allotted for department operation during the year. Savings, amounting to as high as 24 per cent, were made by some of the State institutions. About \$700,000 was returned to the State Treasury as a result of the economy campaign. At the beginning of the last fiscal year, Governor Ritchie instructed all State officials to save at least 5 per cent of the money allotted them by the Legislature and left it to their discretion as to how the economies were to be effected, and similar orders have been issued for this fiscal year.

## Railroad Operating Income

The net railway operating income of the Class I roads of the country in the first eight months of 1932 was \$152,294,000 which was at the annual rate of return of only 0.93 per cent on their property investment. In the same period of 1931, the net railway operating income was \$353,908,000 or 2.15 per cent.

The heavy bonded indebtedness of many railroads is a subject that will command attention in any plan for the rehabilitation of the railroads together with the consideration of the effect of taxes, wages and competitive agencies upon railroad earnings.

## German Foreign Debt

Approximately 40 per cent of the total foreign debt obligations of Germany is held in the United States, the remaining 60 per cent being distributed among all other countries, says the Industrial Conference Board. At the end of February Germany's foreign debt was \$4,912,000,000. This sum does not include direct investment in Germany by foreigners in the form of stocks and bonds and landed property. If these investments are included, the total foreign indebtedness of Germany amounts to about \$6,193,000,000.

During the period from March 1, 1932, to February 28, 1933, Germany will have to pay to foreign countries about \$357,000,000 in interest and amortization charges on short-term and long-term foreign debts. Interest on short-term debts, maturing before March 1, amounts for \$142,000,000, while interest on long-term debts amount to \$150,000,000.

### RECONSTRUCTION FINANCE CORPORATION

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will not be granted unless the projects involved will show earnings sufficient to be self-supporting and self-liquidating • Through long experience in business engineering, construction and management of utility, industrial and municipal projects, we are qualified to prepare the technical and financial data that must accompany applications for a loan • Let us study your project and prepare your application.

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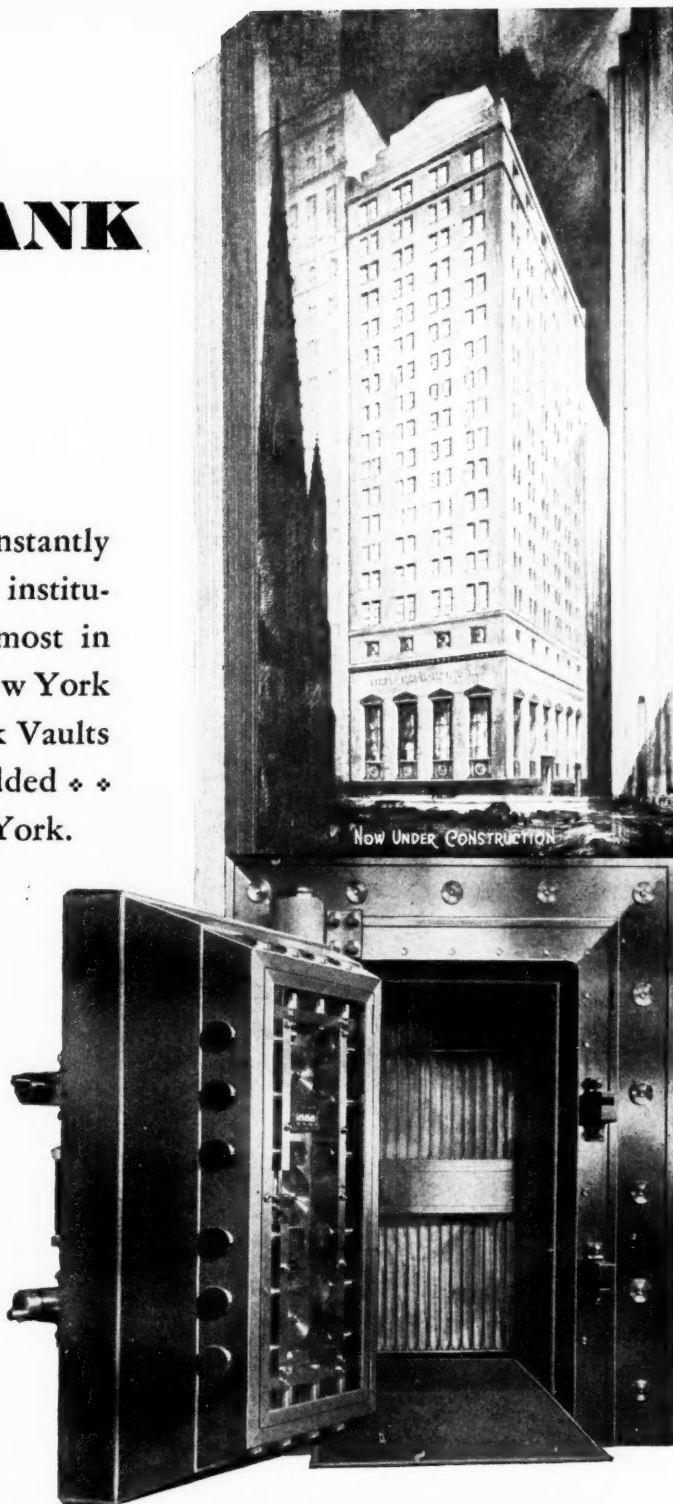


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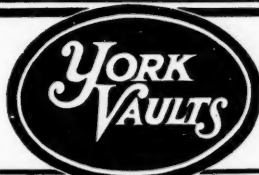
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## New Field for Cold Storage Plants

Temperatures of ordinary cold storage plants are sufficiently low to preserve certain fruits in *small containers* by the frozen pack method, reports the Agricultural Department. The announcement, following recent experiments, is considered important for cold storage and frozen pack workers, many of whom have believed that rapid freezing at very low temperatures was absolutely essential. It indicates a new field for cold storage plants.

## Dictionary of Electrical Terms

A proposed dictionary of electrical engineering terms, prepared under the direction of the American Institute of Electrical Engineers, has been published for review prior to its submittal to the American Standards Association, New York, for adoption as an American Standard. It lists over 3400 definitions ranging from the fundamental definitions on which the science of electricity is based to definitions for practical applications, such as those for control equipment, generation transmission and distribution, welding, illumination, wire and radio communication, electrobiology, and electro-therapeutics.

## Developing Trade Practice Rules

At the recent Trade Practice Conference held by the ornamental iron, bronze and wire industry, under the auspices of the Federal Trade Commission, 425 companies comprising 90 per cent of the volume of the industry were either represented in person or by proxy. It was agreed unanimously that the Trade Practice Conference Rules which were being developed, when accepted by the industry, were to be considered as binding rules of business conduct.

## New Engineering Society Formed

The National Association of Engineers has been organized to include in its membership the engineering profession throughout the United States. R. M. Sanders, a production engineer, 460 West 34th Street, New York, who is temporary chairman of the movement, states it has for its primary purpose the raising of the engineer in public estimation, and to secure for him recognition in the minds of the laymen.

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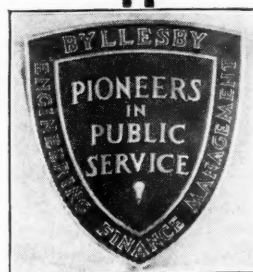
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(Continued from page 23)

Does business really want to empower the Federal Trade Commission to dictate what its prices and its profits shall be?

Does business really want the Federal Trade Commission to compel every business man to abide by every rule that a majority of his industry may adopt?

Does business, as a condition of obtaining advance approval of proposed business arrangements, really want a vastly expanded Federal Trade Commission, with a clutteration of new litigation before the Commission and a lot of new Federal Trade Courts?

Revision of the anti-trust laws is now blocked, largely because rival proposals are today deadlocking one another. Forthwith and without further delay, advocates of these rival proposals should make every effort that they possibly can to compose their differences and pool their energies, at least to the extent of finding out what is the highest common divisor on which they can unite in a program for immediate relief.

No laws on the statute books today carry so many or such drastic penalties as the anti-trust laws. For a mistake under these laws, business men now run the risk of suits for triple damages by their customers, competitors and other affected trade interests, and prosecutions by the Attorney General or the

Federal Trade Commission or both, and loss of money and time in litigation, and perhaps business dismemberment, fine and imprisonment.

Very naturally business men are now asking, more and more insistently:

Why, if we are under all these penalties, isn't there some authority somewhere in the government to which we can go and state what it is we are thinking of doing, and before we do it get from that authority a conclusive ruling, either that it is unlawful or that it is lawful and, if the latter, then conclusive assurance that all these numerous and drastic penalties shall be suspended, unless we continue to act on that ruling after that authority or some court has reversed or contradicted it?

This is the question that today is being asked, oftener than any other question, when business men in their trade institutes, trade associations, boards of trade and chambers of commerce today discuss the anti-trust laws.

Can there be any better starting place than this, from which to begin the sifting process by which we may find out what is the highest common divisor on which those who are today desirous of improving the anti-trust laws can unite in a program for immediate relief?

Once more American business has been warned, on October 3 in the Federal court decision in the Appalachian Coal

case in which three Circuit Court of Appeals judges concurred, that ruinous competition breeding overproduction, unemployment and destruction of industry cannot be prevented by cooperative action, unless and until Congress shall change the drastic prohibitions of our present anti-trust laws.

"We sympathize with the plight of those engaged in the coal industry, whether as operators or as miners," this Federal court declared, "but we have no option but to declare the law as we find it. We cannot repeal Acts of Congress, nor can we overrule decisions of the Supreme Court interpreting them."

"If it be thought that the law should permit agreements eliminating competition as between the parties thereto and fixing as between them prices at which goods shall be sold, in cases where monopolistic control of the market is not intended and does not result, the remedy is with Congress and not with the courts."

Perhaps we are now at the point where immediate emergency relief may help more than any delayed legislative masterpiece—where a prompt temporary remedy may be a greater necessity than any postponed statutory utopia—where speed may be more important than absolute perfection—where prolonged discussion may perhaps help very little, but a very little experimentation in the liberalization of the anti-trust law may possibly help a great deal.

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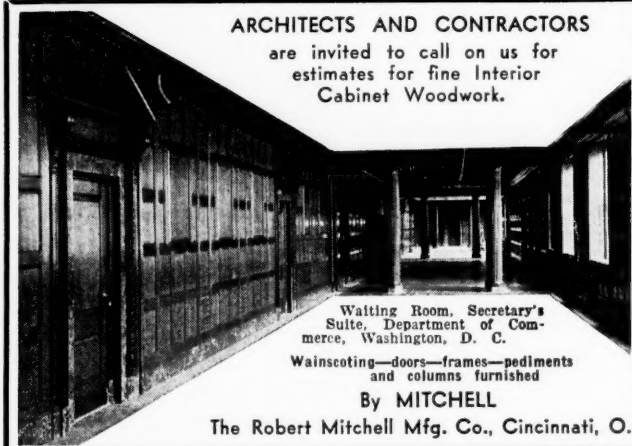
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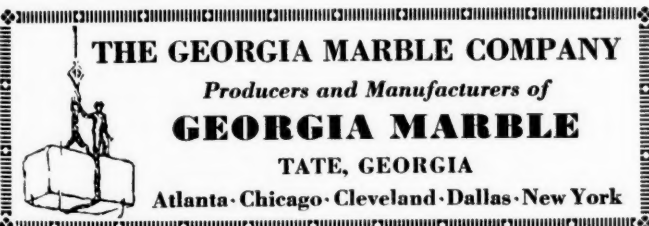
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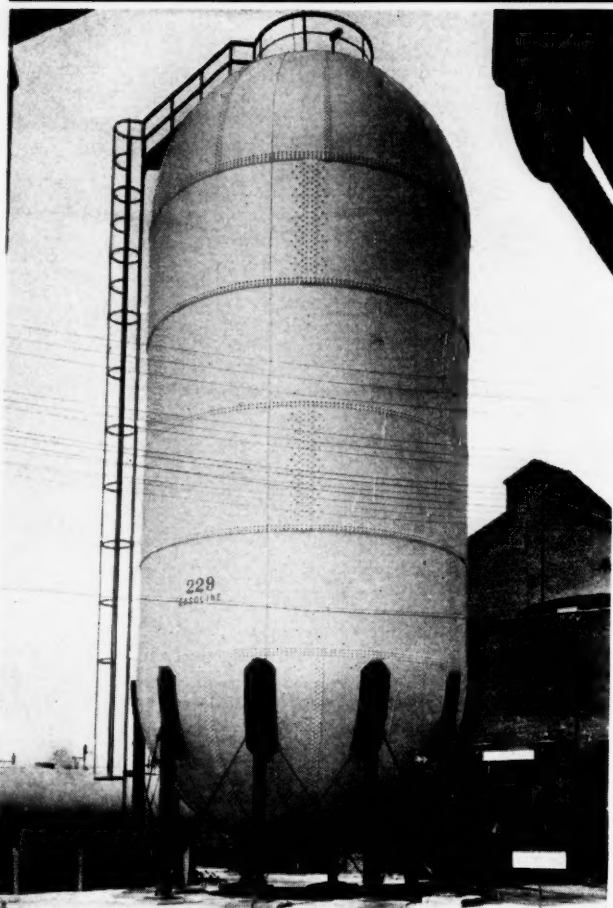
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*Any Type—Any Purpose—Any Capacity*

Dry Chemical Feed Machines  
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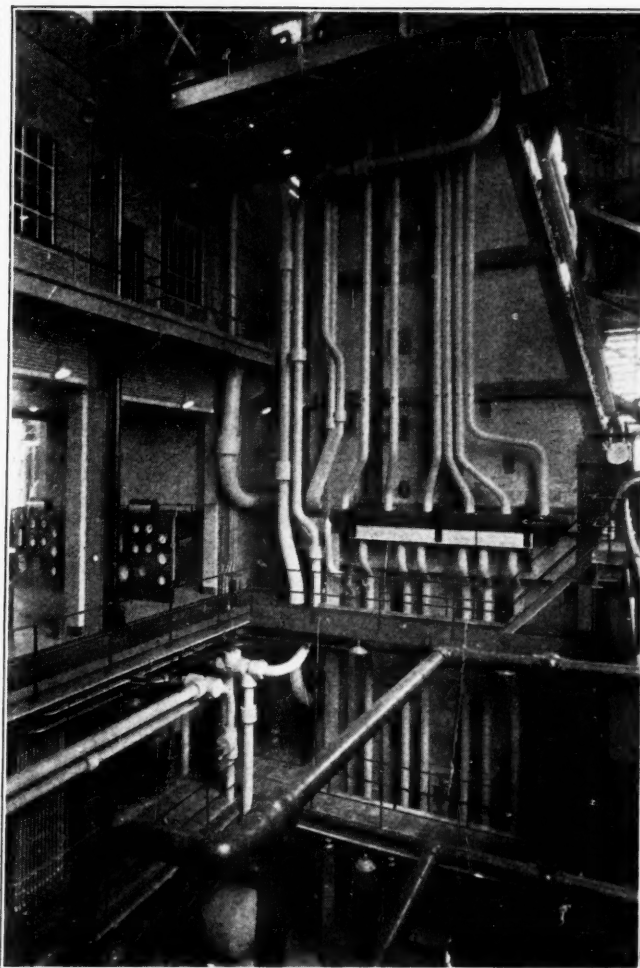


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59 EAST VAN BUREN STREET, CHICAGO

## INTERNATIONAL



Side wall view of boiler installation at Bremo Bluff, designed and constructed by the Electric Management & Engineering Corp., New York, New York.

The complete piping system at Bremo Bluff was fabricated and installed by Pittsburgh Piping and Equipment Company.

It is a typical example of our experience and ability to construct a highly efficient and satisfactory piping job.

Pittsburgh Piping installations include high and low pressure steam, water, oil and air in practically every industry.

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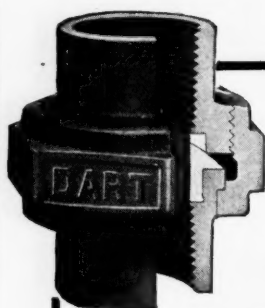
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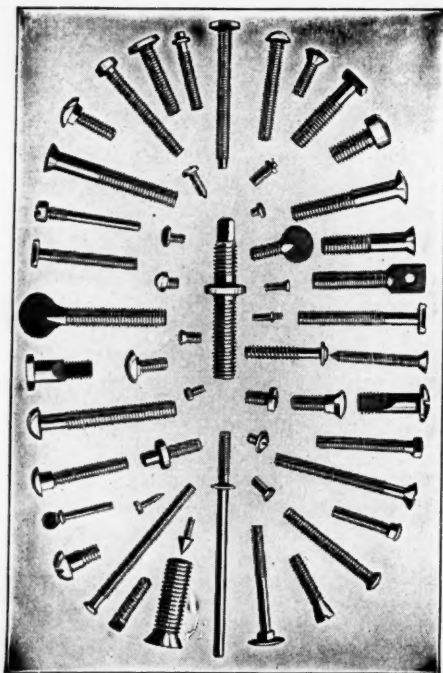
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Heavy stem threads are protected from corrosion by a bronze bushing cast in the bonnet. Rolled-in bronze seat rings cannot loosen in service. Disc-stem connection is strengthened by its horseshoe band construction.

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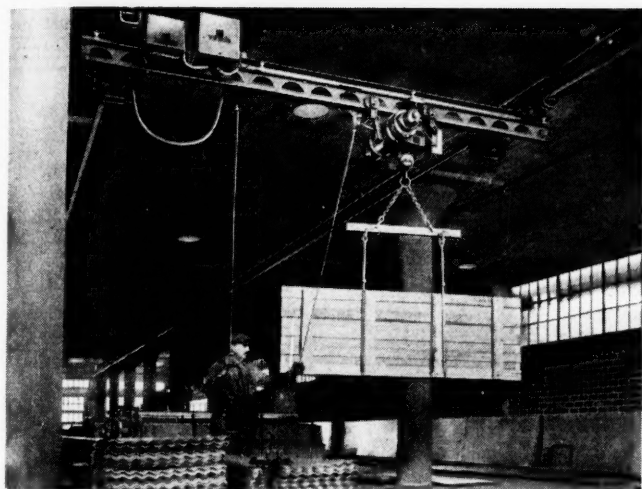
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**S**MALL inefficiencies in handling are deceiving. Taken singly they often seem of little consequence. But total them as they multiply with each hour or each operation; consider the waste over a period of a year. Then you'll understand how a moderate cost Shepard Electric Hoist can quickly earn a surprising extra profit by stopping small wastes in handling.

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*Find out whether your handling methods can be improved with savings comparable to those above. Just tell our nearest office to send an engineer to assist in a survey of your operations.*

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Works: Montour Falls, N. Y., Phila., Pa. Branches in Principal Cities

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**ELECTRIC CRANES AND HOISTS**

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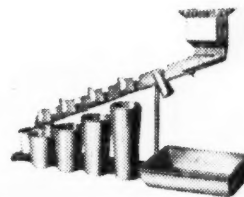
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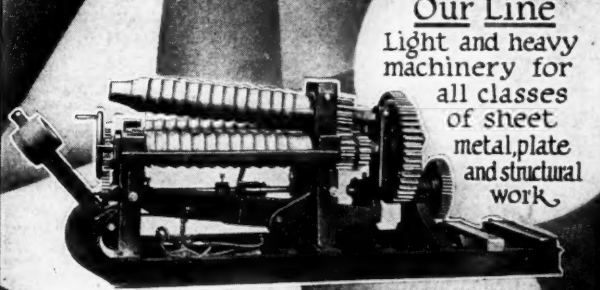
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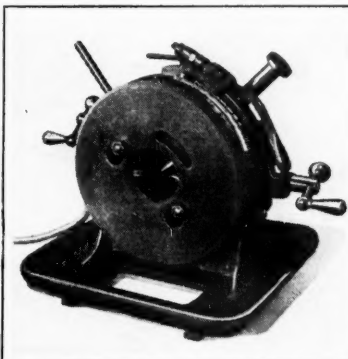


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Automatic Self-Opening  
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  6. Improved folder for filing letters.
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R. W. BIXBY, INC.,  
103 Delward Bldg. Buffalo, New York

## PROPOSALS

### BOND ISSUES - BUILDINGS - PAVING - GOOD ROADS

Bids close November 15, 1932.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received until 10:00 a. m., November 15, 1932, and then publicly opened, for the construction and completion of one (1) Air Corps Barracks for 163 men, including the utilities thereto, at Pope Field, North Carolina. \$25.00 deposit certified check, payable to Treasurer of the United States, required for plans and specifications. A certified check or bid bond in the amount of ten per cent (10%) of the amount of bid will be required with each proposal. Further information on request.

Bids close November 14, 1932.

#### Electric Motor Driven Deep Well Pump

Quincy, Florida.

Sealed Proposals for furnishing and installing of an Electric Motor Driven Deep Well Pump will be received by the City Commission of the City of Quincy, Florida, until twelve o'clock noon, Eastern Standard Time, on the 14th day of November, 1932, and will then be opened and read publicly.

Specifications, official proposal blanks, instructions to bidders, form of contract and bond may be seen at the office of the City Clerk, Quincy, Florida, or one copy of the specifications with instructions and official forms may be obtained upon application to W. Austin Smith, Consulting Engineer, 1207 Lynch Building, Jacksonville, Florida, with payment of the sum of three dollars (\$3.00) to cover the cost of printing and postage.

No bid will be received unless accompanied by a certified check as required by these specifications and instructions.

The Commission reserves the right to reject any and all bids or to accept any bid which the city deems to its best interest.

J. P. SMITH, City Clerk.

Bids close December 16, 1932.

Office of Department Quartermaster, P. C. Dept., Quarry Heights, Canal Zone. Sealed bids, in triplicate, will be received until 11 A. M., December 16, 1932, and then publicly opened for the construction of reinforced concrete warming-up aprons, etc., Albrook Field, Canal Zone. Plans and specifications may be obtained upon application to the Constructing Quartermaster No. 39 Whitehall St., New York City, or the Constructing Quartermaster, Fort Mason, California. Plans and specifications may be seen upon application to the Builders' Exchanges, Miami, Florida, or San Francisco, California; also the F. W. Dodge Corporation, 1205 New Orleans Bank Bldg., New Orleans, La.

Bids close November 14, 1932.

#### Steel Tank and Tower

Quincy, Florida.

Sealed Proposals for the construction of a 300,000 gallon Steel Tank on 100 foot Tower will be received by the City Commission of the City of Quincy, Florida, until twelve o'clock noon, Eastern Standard Time, on the 14th day of November, 1932, and will then be opened and read publicly.

Specifications, official proposal blanks, instructions to bidders, form of contract and bond may be seen at the office of the City Clerk, Quincy, Florida, or one copy of the specifications with instructions and official forms may be obtained upon application to W. Austin Smith, Consulting Engineer, 1207 Lynch Building, Jacksonville, Florida, with payment of the sum of three dollars (\$3.00) to cover the cost of printing and postage.

No bid will be received unless accompanied by a certified check as required by these specifications and instructions.

The Commission reserves the right to reject any and all bids or to accept any bid which the city deems to its best interest.

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OF all the years recently, this is a time when business men need relaxation. Nearness to the great centers of population is one of the features that has made the sand hill country of North Carolina so popular. With dry bracing air; days abounding in sunlight, nature's great restorer and an azure sky that invites life in the open, this section possesses health-giving advantages.

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20 HP. 1200 RPM. 2300 Volt, Fair, Morse  
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50 HP. 600 RPM. 2300 Volt, Gen. Elec.  
100 HP. 1775 RPM. 2300 Volt, Westinghouse

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50 HP. 600 RPM. 440 Volt, Gen. Elec.  
75 HP. 900 RPM. 220 Volt, Northwestern  
100 HP. 800 RPM. 220 Volt, Gen. Elec.  
200 HP. 514 RPM. 440 Volt, Gen. Elec.

#### Synchronous

75 HP. 1200 RPM. 220 Volt, Gen. Elec.  
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Just a few of many motors we have in stock for immediate shipment, all completely rebuilt and ONE YEAR GUARANTEED. Write us on your requirements.

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**Boilers—Air Compressors—  
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ESTABLISHED 1904  
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Guaranteed Condition.

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CRUSHER PLANT—With Buchanan 56-in.x72-in. jaw crusher, 2—20A and 2—10A Telsmith gyratory crushers, 8—Robins Gyrex screens, 564 cu. yd. steel bin, belt conveyors.

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1—P&H 1 1/4 yard shovel front end, complete with dipper and cable. Very good condition, at a bargain. Located Newark, N. J.

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3/60/2300 Volts

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300 HP. Genl. Elect.	MT 450 RPM.
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600 HP. Genl. Elect.	MT 514 RPM.
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2—350 HP. Heine with Stokers—180 lbs.	
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2—264 HP. B. & W.	190 lbs.

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1414' Ingersoll-Rand Steam Driven  
Imperial type 10—14x18x16.

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125 KW Elect. Mch. Generator 220/440
Direct connected to 14x24
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750 HP. Fulton Diesel Engine
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Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of MANUFACTURERS RECORD, published monthly at Baltimore, Md., for October 1, 1932.

State of Maryland,

City of Baltimore,

Before me, a Notary Public, in and for the State and City aforesaid, personally appeared J. Robert Gould, who, having been duly sworn according to law, deposes and says that he is the Treasurer of the MANUFACTURERS RECORD, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, Manufacturers Record Publishing Co., Baltimore, Md.; editor, Frank Gould, MANUFACTURERS RECORD, Baltimore Md.; managing editor, Howard L. Clark, MANUFACTURERS RECORD, Baltimore, Md.; business manager, Frank Gould, MANUFACTURERS RECORD, Baltimore, Md.

2. That the owner is Manufacturers Record Publishing Company, Baltimore, Md. Stockholders are: Frank Gould, MANUFACTURERS RECORD, Baltimore, Md.; C. R. Marchant, MANUFACTURERS RECORD, Baltimore, Md.; Wm. M. Beury, MANUFACTURERS RECORD, Baltimore Md.; J. Robert Gould, MANUFACTURERS RECORD, Baltimore, Md.; Fleet-McGinley, Inc., Baltimore, Md.

3. That the known bondholders, mortgagees and other security holders owning or holding 1% or more of total amount of bonds, mortgages or other securities are: Baltimore Commercial Bank; estate of Richard H. Edmonds.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security-holders, if any, contain not only the list of stockholders and security-holders as they appear upon the books of the company, but also, in cases where the stockholder or security-holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security-holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona-fide owner, and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

J. ROBERT GOULD,  
Treasurer.

Sworn to and subscribed before me this 27th day of September, 1932.

EDWIN T. SICKEL.

(My commission expires May 1, 1933.)



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## Small Plant's Part in Business Recovery

Despite the suicidal competition now rife in the industry, the independent fabricator of structural steel will continue to find an active field of usefulness, according to W. M. Wood, president of the Mississippi Valley Structural Steel Company, Decatur, Ill., who addressed the recent annual convention of the American Institute of Steel Construction. He pointed out that fabricators generally through greater efficiency of operation, have made a remarkable fight against continually lowering prices. As a result, the cost of fabricating a ton of structural steel is but a fraction of that of a few years ago. With resumption of building operations structural steel will continue to be the dominant factor in construction. And then with progress must come new uses for structural steel.

In the scramble for business, mill fabricating plants have been accused of tendering bids for work, in the estimate for which, costs of fabrication have been largely eliminated in order to make a sale of the plain structural steel. This has led to the belief in some quarters that it is the purpose of the mills to put the independent fabricator out of business. There is a place in this country for the mill fabricator, but just as surely, there is a definite place for the efficient and well located independent fabricator.

Referring directly to the outlook for the small plant, J. L. Kimbrough, of the Indiana Bridge Company, Muncie, Ind., asserted that the small fabricating shops will play an important part in the business recovery which is ahead of us, as they are in a position to blazon the way to changed usages and decentralization of work. Mr. Kimbrough said in part:

"The small fabricating unit will continue to serve to the best advantage the construction needs of the trade area that it can cover effectively. It is my opinion that for some time in the future the smaller fabricating unit is going to enjoy a greater proportionate development than the larger fabricating units. The earlier needs of the country are going to develop through re-arrangement of existing structures as well as repairs and replacement of these in whole or in part. The re-adjustment in industry will undoubtedly bring about a considerable change in the use of present buildings to new uses, and in this as well as in the negligent modernization in industry, the small fabricator is best prepared to serve. The watchword of the small fabricating unit must be of operation and efficiency of service. With these in mind, I do not anticipate any material change in the relationship of the small unit to industry as a whole."



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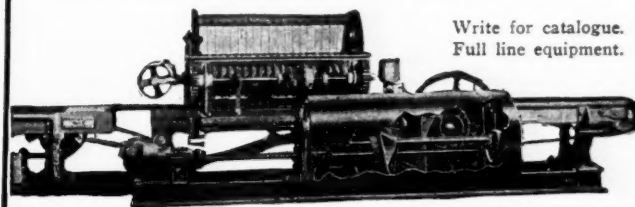
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